DOCUMENT RESUME

ED 425 683 HE 031 733

AUTHOR	Horn, Laura J.
TITLE	Stopouts or Stayouts? Undergraduates Who Leave College in Their First Year. Statistical Analysis Report.
INSTITUTION	MPR Associates, Berkeley, CA.
SPONS AGENCY	National Center for Education Statistics (ED), Washington, DC.
REPORT NO	NCES-1999-087
ISBN	ISBN-0-16-049827-9
PUB DATE	1998-11-00
NOTE	78p.
AVAILABLE FROM	ED Pubs, P.O. Box 1398, Jessup, MD 20794-1398; Tel: 1-877-4ED-PUBS (Toll Free), or U.S. Government Printing Office, Superintendent of Documents, Mail Stop: SSOP, Washington, DC 20402-9328.
PUB TYPE	Numerical/Quantitative Data (110) -- Reports - Evaluative (142)
EDRS PRICE	MF01/PC04 Plus Postage.
DESCRIPTORS	*College Freshmen; *Dropout Characteristics; Dropout Rate; Dropout Research; Enrollment Rate; Higher Education; Private Colleges; Public Colleges; *Reentry Students; Statistical Data; *Stopouts; *Student Experience; Tables (Data); Two Year Colleges
IDENTIFIERS	*Beginning Postsecondary Students Long Study

ABSTRACT

This report examines the beginning of the educational experiences of students who leave college before their second year, both those who return to college later (stopouts) and those who do not return (stayouts). The report is based on data from the 1989-90 Beginning Postsecondary Students Longitudinal Study. First-year students in 1989-90 were followed up in 1992 and 1994. Among study highlights are the following: overall, nearly 30 percent of first-year students left before their second year; 64 percent of students who left the 4-year sector returned within five years (stopped out), whereas half of students who left the public 2-year sector stopped out and half stayed out; among stopouts in the 4-year sector 42 percent returned to the same institution, whereas in the public 2-year sector, 57 percent returned to the same institution; and in both sectors, students who stayed out were more likely to be older, to have children, and to work full time. Twenty-four tables and figures present data in sections on: overview of first-year leavers, stopout path from 4-year institutions, stopout path from public 2-year institutions, and characteristics of stopouts and stayouts. Appended are a glossary and technical notes. (Contains 18 references.) (DB)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

HE

ED 425 683

NATIONAL CENTER FOR EDUCATION STATISTICS

Statistical Analysis Report November 1998

Stopouts or Stayouts? Undergraduates Who Leave College in Their First Year

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)
☑ This document has been reproduced as received from the person or organization originating it.
☐ Minor changes have been made to improve reproduction quality.
• Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

HE 031 733

U.S. Department of Education
Office of Educational Research and Improvement NCES 1999-087

2

BEST COPY AVAILABLE

NATIONAL CENTER FOR EDUCATION STATISTICS

Statistical Analysis Report November 1998

Stopouts or Stayouts? Undergraduates Who Leave College in Their First Year

Laura J. Horn
MPR Associates, Inc.

C. Dennis Carroll
Project Officer
National Center for Education Statistics

U.S. Department of Education
Office of Educational Research and Improvement NCES 1999-087

U.S. Department of Education
Richard W. Riley
Secretary

Office of Educational Research and Improvement
C. Kent McGuire
Assistant Secretary

National Center for Education Statistics
Pascal D. Forgione, Jr.
Commissioner

The National Center for Education Statistics (NCES) is the primary federal entity for collecting, analyzing, and reporting data related to education in the United States and other nations. It fulfills a congressional mandate to collect, collate, analyze, and report full and complete statistics on the condition of education in the United States; conduct and publish reports and specialized analyses of the meaning and significance of such statistics; assist state and local education agencies in improving their statistical systems; and review and report on education activities in foreign countries.

NCES activities are designed to address high priority education data needs; provide consistent, reliable, complete, and accurate indicators of education status and trends; and report timely, useful, and high quality data to the U.S. Department of Education, the Congress, the states, other education policymakers, practitioners, data users, and the general public.

We strive to make our products available in a variety of formats and in language that is appropriate to a variety of audiences. You, as our customer, are the best judge of our success in communicating information effectively. If you have any comments or suggestions about this or any other NCES product or report, we would like to hear from you. Please direct your comments to:

National Center for Education Statistics
Office of Educational Research and Improvement
U.S. Department of Education
555 New Jersey Avenue NW
Washington, DC 20208–5574

November 1998

The NCES World Wide Web Home Page is:
http://nces.ed.gov/pubsearch/index.html

Suggested Citation
U.S. Department of Education. National Center for Education Statistics. *Stopouts or Stayouts? Undergraduates Who Leave College in Their First Year,* NCES 1999–087, Project Officer, C. Dennis Carroll. Washington, DC: 1998.

For ordering information on this report, write:

U.S. Department of Education
ED Pubs
P.O. Box 1398
Jessup, MD 20794–1398

or by calling toll free 1–877–4ED–Pubs.

Content Contact:
C. Dennis Carroll
(202) 219–1774

Highlights

- Nearly 30 percent of 1989–90 beginning students left postsecondary education before the beginning of their second year. Sixteen percent of students enrolled in the 4-year sector left, while 42 percent of students enrolled in the public 2-year sector did so.
- Among students who left the 4-year sector before the beginning of their second year, a majority (64 percent) returned within 5 years (stopped out), and 36 percent did not return (stayed out). Among students who left the public 2-year sector, half stopped out and half stayed out.
- Among *stopouts* in the 4-year sector, 42 percent returned to the same institution, and 58 percent transferred elsewhere. In the public 2-year sector, the opposite pattern occurred: 57 percent returned to the same institution, and 43 percent transferred.
- At least half of stopouts who transferred—65 percent from the 4-year sector and 51 percent from the public 2-year sector—reenrolled in the 2-year sector.
- About one-third of stopouts from the 4-year sector earned some postsecondary credential within 5 years; those who transferred earned primarily vocational certificates or associate's degrees, and those who returned to the same institution earned primarily bachelor's degrees.
- In the 4-year sector, stopouts who left private, not-for-profit institutions and returned to their original institution were much more likely to earn a bachelor's degree and much less likely to subsequently leave without a degree than their counterparts in public institutions.
- Attainment rates for stopouts from the public 2-year sector were higher for those who transferred—nearly half earned some credential (almost exclusively vocational certificates)—than for those who returned to the same institution. About one-quarter (27 percent) of the stopouts who returned earned a credential (half earned certificates and half earned associate's degrees).
- In both the 4-year and public 2-year sectors, students who stayed out after leaving in their first year were more likely than stopouts to be older, to have children, and to work full time. Stayouts were also less academically integrated into their program than were stopouts.

Foreword

This report examines the educational experiences of students who leave college before the beginning of their second year. It tracks the path of those who return (stopouts) to determine where and when they reenrolled. The report also compares the background and school experiences of stopouts with those who do not return (stayouts). Because of fundamental differences in the student populations and the missions of the institutional sectors, the analysis was conducted separately for students enrolled in 4-year institutions and those enrolled in public 2-year institutions. Because of their diverse nature and small sample sizes, students in other types of postsecondary institutions including those in the private, for-profit sector; public less-than-2-year institutions; and private, not-for-profit less-than-4-year institutions were excluded. In total, these individuals represent about 14 percent of the undergraduate population of beginning students.

The report is based on data from the 1989–90 Beginning Postsecondary Students Longitudinal Study (BPS:90/94). The BPS survey is the longitudinal component of the National Postsecondary Student Aid Study (NPSAS:90), a nationally representative sample that includes students enrolled in all types of postsecondary institutions, ranging from 4-year colleges and universities to less-than-2-year vocational institutions. The BPS:90/94 cohort consists of students who enrolled in postsecondary education for the first time during the 1989–90 academic year. The cohort was followed up in 1992 and 1994; it therefore offers a wide range of information regarding student persistence and degree attainment 5 years after members of the cohort first enrolled in postsecondary education.

The estimates (mostly percentages) presented in the report were produced using the BPS:90/94 Data Analysis System (DAS), a microcomputer application that allows users to specify and generate their own tables. The DAS produces design-adjusted standard errors necessary for testing the statistical significance of differences shown in the tables. For more information regarding the DAS, readers should consult appendix B of this report.

Acknowledgments

I would like to thank all the reviewers of this report, whose criticism and comments strengthened and clarified the final document. Ellen Bradburn from Education Statistics Services Institute (ESSI) provided a comprehensive methodological and substantive review of the first draft. Reviewers of the final report included Robert Burton, John Wirt, and Kristen Perry at the National Center for Education Statistics (NCES), Daniel Goldenberg at the Office of the Undersecretary (OUS), and Jennifer Kron at the Office of Postsecondary Education (OPE).

At MPR Associates, Susan Choy reviewed the draft and provided helpful comments. Barbara Kridl, Andrea Livingston, Karyn Madden, Mary Mack, and Francesca Tussing edited and produced the report.

For sale by the U.S. Government Printing Office
Superintendent of Documents, Mail Stop: SSOP, Washington, DC 20402-9328
ISBN 0-16-049827-9

Table of Contents

	Page
Highlights	iii
Foreword	iv
Acknowledgments	v
List of Tables	ix
List of Figures	xi
Introduction	1
Survey Data and Definition of Terms	3
Definition of Terms	3
First-Year Persister	3
First-Year Stopout	4
First-Year Stayout	4
Departure Rates	4
Overview of First-Year Leavers	7
Stopout Path From 4-Year Institutions	9
Stopout Path From Public 2-Year Institutions	19
Who Stops Out and Who Stays Out?	23
Controlling for Factors Related to Early Departure	23
4-Year Sector	24
Public 2-Year Sector	27
Stopouts Versus Stayouts	28
Student Characteristics	30
Educational Experiences of Students Who Left the 4-Year Sector	33
Educational Experiences of Students Who Left the Public 2-Year Sector	43
Summary and Conclusions	45
Bibliography	49

Page

Appendix A—Glossary 51

Appendix B—Technical Notes and Methodology 61

List of Tables

Table		Page
1	Percentage distribution of 1989–90 beginning students according to their persistence or departure status in 1989–90, by first institution attended	8
2	Percentage distribution of 1989–90 beginning students according to first institution attended, by persistence or departure status in 1989–90	8
3	Among 1989–90 beginning students who stopped out in their first year, the percentage with a grade point average (GPA) of 3.0 or higher and the average GPA, by stopout return status for those who left in 1989–90 and first institution attended	11
4	Among 1989–90 beginning students who stopped out in their first year, the percentage who attempted more than one degree and the average number of degrees attempted by 1994, by stopout return status for those who left in 1989–90 and first institution attended	12
5	Among 1989–90 beginning students who stopped out in their first year, the percentage distribution according to the year they returned, by stopout return status for those who left in 1989–90 and first institution attended	14
6	Percentage distribution of 1989–90 beginning students according to their highest degree attained or enrollment status in 1994, by persistence or departure status in 1989–90 and first institution attended	16
7	Among first-year stopouts from public 2-year institutions who had an associate's degree (AA) objective in 1989–90, the percentage distribution according to degree attainment in 1994, by stopout return status	21
8	Percentage of 1989–90 beginning students who interrupted their enrollment from a 4-year institution in their first year and the adjusted percentage after accounting for the covariation of variables listed in the table	25
9	Percentage of 1989–90 beginning students who interrupted their enrollment from a public 2-year institution in their first year and the adjusted percentage after accounting for the covariation of variables listed in the table	29
10a	Percentage distribution of 1989–90 beginning students who interrupted their enrollment in their first year, according to selected demographic characteristics, by departure status in 1989–90 and first institution attended	31

Table		Page
10b	Percentage distribution of 1989–90 beginning students in 4-year institutions who interrupted their enrollment in their first year, according to selected demographic characteristics, by departure status in 1989–90 and first institution attended	32
11a	Percentage distribution of 1989–90 beginning students who interrupted their enrollment in their first year, according to socioeconomic status and race–ethnicity, by departure status in 1989–90 and first institution attended	34
11b	Percentage distribution of 1989–90 beginning students in 4-year institutions who interrupted their enrollment in their first year, according to socioeconomic status and race–ethnicity, by departure status in 1989–90 and first institution attended	34
12	Percentage distribution of 1989–90 beginning students according to attendance intensity, by persistence or departure status in 1989–90 and first institution attended	35
13	Percentage of 1989–90 beginning students with a first-year grade point average (GPA) of 3.0 or higher and the average GPA, by persistence or departure status in 1989–90 and first institution attended	36
14a	Percentage of 1989–90 beginning students who reported "sometimes or often" participating in various academic activities, by persistence or departure status in 1989–90 and first institution attended	37
14b	Percentage distribution of 1989–90 beginning students according to their academic integration index score, by persistence or departure status in 1989–90 and first institution attended	39
15	Percentage of 1989–90 beginning students according to their use of counseling and job placement services at the first institution, by persistence or departure status in 1989–90 and first institution attended	40
16	Percentage distribution of 1989–90 beginning students according to their overall satisfaction with their first institution, by persistence or departure status in 1989–90 and first institution attended	41
17	Percentage of 1989–90 beginning students according to financial aid status, by persistence or departure status in 1989–90 and first institution attended	42
B1	Standard errors for text table 6: Percentage distribution of 1989–90 beginning students according to their highest degree attained or enrollment status in 1994, by persistence or departure status in 1989–90 and first institution attended	63

List of Figures

Figure		Page
1	Stopout path for 1989–90 beginning students in 4-year institutions and outcomes in 1994 for first-year persisters and stopouts	10
2	Persistence and attainment outcomes in 1994 of beginning students who stopped out of 4-year institutions in their first year (1989–90), by control of institution	15
3	Stopout path for 1989–90 beginning students in public 2-year institutions and outcomes in 1994 for first-year persisters and stopouts	20

Introduction

Undergraduates who complete their first year in postsecondary education and reenroll in their second year are more likely than not to attain a degree. Whereas about half of all students who enter postsecondary education complete some postsecondary credential within 5 years (Berkner et al. 1996), about two-thirds of first-year persisters do so.[1] Thus, students' experiences in their first year of college may have a lasting influence on their long-term persistence.

Nearly one-third of all undergraduates leave postsecondary education in their first year, a greater proportion than in all later years.[2] Student characteristics associated with early departure are typically linked to nontraditional status: being older, working full time, attending school part time, and having financial and family obligations that may conflict with attending school (Horn 1996, Lee 1996, Moore 1995, Mohammadi 1994, Feldman 1993). While students who leave are generally less academically prepared and have lower grades than those who stay, some studies that interviewed leaving students also reported that students cited financial reasons, family or job responsibilities, and personal problems as reasons for leaving more often than they did school or academic reasons (Lee 1996, Ogletree 1992, Kent State University 1993, Bonham and Luckie 1993, White 1971). For example, one survey of 399 leavers from a community college found that less than 20 percent of students cited school factors as reasons for leaving; 40 percent cited lack of time or money; and 67 percent cited "other events or circumstances" (Bonham and Luckie 1993).

Other studies have reported that many students who left did so with intentions to return (Sydow 1996, University of Maryland 1987, Bradley 1975). Little has been reported, however, on whether or not students actually do return, and if so, how successful they are in completing their postsecondary education. That is the focus of this report. Taking advantage of a national longitudinal survey of beginning postsecondary students (BPS) who began their postsecondary education in 1989–90, the analysis will address the following questions:

- Among undergraduates who drop out in their first year, who comes back within 5 years and what is their subsequent persistence and attainment?

[1] BPS:90/94 Data Analysis System.

[2] At least within 5 years. Based on the BPS:90/94 Data Analysis System.

- How do students who return differ from those who stay out?

The study includes a multivariate analysis to control for the interrelationship of factors that are associated with early departure from college.

Survey Data and Definition of Terms

The analysis is based on the 1989–90 Beginning Postsecondary Student (BPS:89/94) survey, the longitudinal component of the National Postsecondary Student Aid Study (NPSAS:90). The BPS sample consists of undergraduates who enrolled in postsecondary education for the first time in 1989–90. They were then followed up in 1992 and 1994. Thus, persistence and attainment can be determined for a 5-year period. Although this relatively short time frame precludes analysis of students who stop out for long periods of time, it permits tracking those who leave and return within a few years.

For most of the analysis, results are presented separately for the *4-year sector* and *public 2-year sector*. The 4-year sector is further disaggregated into *public institutions* and *private, not-for-profit institutions*.[3] The analysis does not include any private, for-profit institutions or other less-than-4-year institutions, which account for about 14 percent of the beginning postsecondary student population.[4] Students in these institutions are too diverse to be grouped together and the samples of each institution type are too small to be included in the analysis.

Definition of Terms

The analysis is based on students who enrolled in postsecondary education for the first time in 1989–90. These students are referred to in the tables and figures as *beginning students*. Among the beginning students, there are three outcome groups that are compared throughout the report: *first-year persisters*, *stopouts*, and *stayouts*. The three groups and other terms used in the report are described below.

First-Year Persister

A beginning student who was continuously[5] enrolled (at any level of institution, full time or part time) from the time he or she first started in the academic year 1989–90 and who remained enrolled the subsequent year (1990–91) was considered a first-year persister. This student may or may not have left in subsequent enrollment periods. A student who transferred in the first year,

[3]See the glossary in appendix A for a detailed definition of institution types under the "OFCO8990" entry.
[4]See table 3.
[5]"Continuous" takes into account summer breaks; they are allowed 4 or fewer months of nonenrollment.

regardless of where he or she transferred as long as there was no more than a 4-month break, was also considered a first-year persister (e.g., attended a term, transferred, and attended the second term at the transfer institution).[6] In some cases, the term "persister" is used in the text for ease of presentation. In all cases, this term refers to first-year persister.

First-Year Stopout

A beginning student who interrupted his or her enrollment in the first year with a break of more than 4 months before reenrolling was considered a first-year stopout. This includes students who finished their first year but did not enroll in a second year. The timing of reenrollment could range from a period of just over 4 months to 4 years (i.e., to the 1994 follow-up survey). Stopouts were further distinguished according to where they subsequently reenrolled. Those who reenrolled in the same institution are referred to as *stopout returns*, and those who transferred elsewhere are referred to as *stopout transfers*. It is possible for first-year stopouts subsequently to have stopped out again. This analysis considers only the first stopout occurrence.

First-Year Stayout

A beginning student who left in the first year and did not return before the end of the last follow-up in the spring of 1994 (i.e., did not return within 5 years) was considered a first-year stayout. It is possible that some of these students are long-term stopouts and returned after the date of the 1994 follow-up survey.

Departure Rates

The rates of first-year attrition reported in this study are the percentages of students who left postsecondary education altogether before the beginning of their second year. These rates are, by definition, less than institutional rates of attrition such as those compiled by the American College Testing (ACT) Program. Institutional rates of attrition refer to students who leave an institution regardless of whether they leave postsecondary education. A student who leaves an institution and transfers without an enrollment break to another institution is considered a persister in this study, but a leaver from an institutional perspective. For example, the 1990 first-year institutional attrition rate reported by ACT for all 4-year institutions is 26.7 percent (ACT Program 1990). The comparable institutional rate from BPS is 27.7 percent (BPS:89/94 DAS). The per-

[6]This definition differs slightly from that in another NCES publication using the BPS:89/94 data. In Berkner et al., students who transferred downward (e.g., from a 4-year to a 2-year institution) even if they had no break in enrollment were not considered persisters. Students who transferred down a level were grouped together with delayed transfers, who were identified as stopouts. In Berkner et al., "stopouts" were those who stopped out and returned to the same institution.

centage of BPS first-year students who started in 4-year institutions but who left postsecondary education before the beginning of their second year was 16 percent. Thus, roughly 11 percent of students had transferred to another institution without an enrollment break either during the 1989–90 academic year or at the beginning of 1990–91.

Overview of First-Year Leavers

According to Tinto's (1993) theory of departure, the primary roots of departure from higher education can be identified as a student's "intention" and "commitment." Obviously, there are many experiences in college that can affect students' intentions and either strengthen or weaken their resolve to finish. Students who withdraw early may be experiencing difficulty adjusting to the challenges of college life. For instance, the work may be too difficult or their chosen field of study unsuitable (what Tinto refers to as "incongruence" or "lack of fit"). Some students, especially those who come from families where no members have attended college, find the social adjustment to college just too difficult. Still others, especially older students, are faced with obligations such as family and work responsibilities, which limit their time and ability to participate fully in academic life.

Whatever the reason for early withdrawal, nearly 30 percent of 1989–90 beginning students left postsecondary education in their first year (table 1). About half of those who left returned some time before 1994 (stopped out), and the other half stayed out. A majority of both stopouts and stayouts (63 percent) began in the public 2-year sector (table 2). In contrast, 21 percent of stopouts and 13 percent of stayouts began in public 4-year colleges, while 8 percent of stopouts and 4 percent of stayouts began in private, not-for-profit 4-year institutions. Students who left the public 2-year sector were disproportionately represented relative to the total proportion of students enrolled in these institutions (44 percent). The opposite was true for students who left the 4-year sectors: 29 percent of undergraduates were enrolled in public institutions and 14 percent in private, not-for-profit institutions.

The next two sections of the report detail the paths of students who stopped out from the 4-year and public 2-year sectors. The findings are presented separately for these two sectors because the institutions serve very different student populations and have different missions.[7] As Cohen and Brawer point out in their book on American community colleges, public 2-year colleges "attract those who were not being served by traditional higher education: those who could not afford the tuition; who could not take the time to attend a college on a full-time basis; . . . who had inadequate preparation in the lower schools. . . ." (1989, 22). Thus, students enrolled in public 2-year institutions are more likely than their counterparts at 4-year institutions to be nontraditional, to attend school on a part-time basis while they work full time, and to have shorter

[7]For a detailed analysis of beginning undergraduates enrolled in the public 2-year and 4-year sectors, see Kojaku and Nuñez (forthcoming).

term educational objectives. Students who attend public 2-year institutions also understand that due to the open admissions policies of most institutions in this sector, they can leave and return without penalty.

Table 1—Percentage distribution of 1989–90 beginning students according to their persistence or departure status in 1989–90, by first institution attended

	Attained certificate	Persisted to 1990–91	Left in 1989–90		
			Total	Stopped out	Stayed out through 1994
Total*	1.2	69.5	29.4	15.9	13.5
Institution in 1989–90					
Public 2-year	2.1	55.5	42.4	21.5	21.0
All 4-year	0.2	83.9	15.9	10.1	5.8
Public	0.2	82.3	17.5	10.9	6.6
Private, not-for-profit	0.2	87.3	12.5	8.3	4.2

*Does not include students in private, for-profit institutions; public less-than-2-year institutions; or private, not-for-profit less-than-4-year institutions (about 14 percent of beginning students).

NOTE: Details may not sum to 100 due to rounding.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1989–90 Beginning Postsecondary Students Longitudinal Study, Second Follow-up (BPS:90/94), Data Analysis System.

Table 2—Percentage distribution of 1989–90 beginning students according to first institution attended, by persistence or departure status in 1989–90

	4-year			Public 2-year	Other[1]
	Total	Public	Private, not-for-profit		
Total	42.2	28.5	13.7	43.7	14.1
Persistence or departure in 1989–90					
Persisted[2]	50.4	33.3	17.1	35.8	13.8
Stopped out	28.4	20.8	7.7	62.7	8.9
Stayed out through 1994	16.7	12.8	3.9	62.6	20.7

[1]Includes private, not-for-profit less-than-4-year; public less-than-2-year; and all for-profit institutions.
[2]Includes a small percentage who attained a certificate in 1989–90.

NOTE: Details may not sum to totals due to rounding.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1989–90 Beginning Postsecondary Students Longitudinal Study, Second Follow-up (BPS:90/94), Data Analysis System.

Stopout Path From 4-Year Institutions

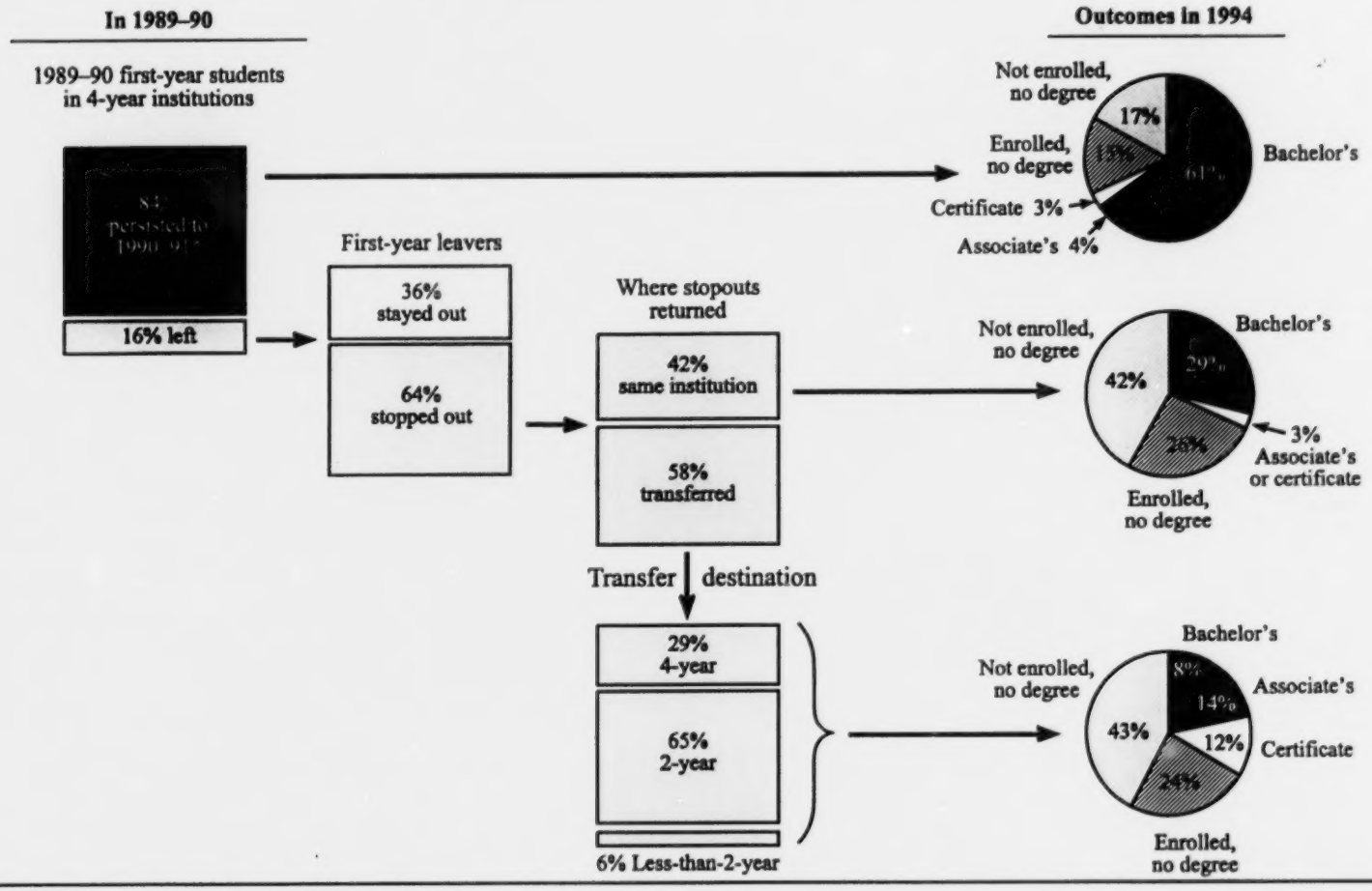
About 16 percent of first-year students at 4-year colleges and universities interrupted their enrollment in their first year (figure 1). Among those who left, a majority (64 percent) returned sometime before 1994, and 36 percent stayed out. Among those who returned, a higher proportion transferred to another institution (58 percent) than returned to the same institution (42 percent). And a majority (65 percent) of those who changed institutions transferred to the 2-year sector.

An examination of students' grades suggests that beginning students in the 4-year sector who stopped out and subsequently transferred may have been experiencing academic difficulty and changed their degree intentions. About 12 percent of stopout transfers had GPAs of 3.0 or higher, compared with nearly one-third (31 percent) of those who returned to the same institution (table 3). The cumulative GPA of stopout transfers was 2.00, compared with 2.39 for stopouts who returned to the same institution. This pattern was very apparent in private, not-for-profit 4-year institutions where the cumulative GPA for stopout transfers was 2.25, compared with 2.80 for stopout returns.

In addition to GPA differences, stopouts who transferred from the 4-year sector were much more likely to have attempted more than one type of degree by 1994. Attempting more than one degree indicates a change in students' intentions. For example, they may have begun college working toward a bachelor's degree and subsequently changed programs and attempted an associate's degree or vocational certificate. Nearly half (45 percent) of stopout transfers had done so by 1994, compared with 7 percent of stopouts who returned to their original institution (table 4). The fact that fewer than 10 percent of stopouts who returned to their original institution attempted more than one degree implies that most stayed in the 4-year sector for the remainder of their enrollment.

Despite differences in GPA and degree intentions, if attainment is defined as earning some postsecondary credential within 5 years, the attainment rates between stopouts who returned to their institution of origin and those who transferred from the 4-year sector were similar, about one-third attained some credential (figure 1). However, stopout transfers were more likely to earn subbaccalaureate credentials, while those who returned to the same institution earned primarily bachelor's degrees.

Figure 1— Stopout path for 1989–90 beginning students in 4-year institutions and outcomes in 1994 for first-year persisters and stopouts



*Includes 0.2 percent who obtained a certificate in 1989–90.

NOTE: Details may not sum to 100 due to rounding.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1989–90 Beginning Postsecondary Students Longitudinal Study, Second Follow-up (BPS: 90/94), Data Analysis System.

BEST COPY AVAILABLE

Table 3—Among 1989–90 beginning students who stopped out in their first year, the percentage with a grade point average (GPA) of 3.0 or higher and the average GPA, by stopout return status for those who left in 1989–90 and first institution attended

	Percent with a GPA of 3.0 or higher	Average GPA
	All stopouts	
Total*	26.5	2.28
Stopout return status		
Returned to same institution	29.2	2.36
Transferred	23.8	2.20
	All 4-year	
Total	19.9	2.16
Stopout return status		
Returned to same institution	30.8	2.39
Transferred	12.0	2.00
	Public 4-year	
Total	14.8	2.03
Stopout return status		
Returned to same institution	22.1	2.20
Transferred	10.0	1.92
	Private, not-for-profit 4-year	
Total	33.8	2.52
Stopout return status		
Returned to same institution	49.6	2.80
Transferred	18.5	2.25
	Public 2-year	
Total	29.9	2.34
Stopout return status		
Returned to same institution	28.6	2.35
Transferred	31.4	2.33

*Does not include students in private, for-profit institutions; public less-than-2-year institutions; or private, not-for-profit less-than-4-year institutions (about 14 percent of beginning students).

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1989–90 Beginning Postsecondary Students Longitudinal Study, Second Follow-up (BPS:90/94), Data Analysis System.

Table 4—Among 1989–90 beginning students who stopped out in their first year, the percentage who attempted more than one degree and the average number of degrees attempted by 1994, by stopout return status for those who left in 1989–90 and first institution attended

	More than one degree attempted	Average number attempted
	All stopouts	
Total*	36.8	1.4
Stopout return status		
Returned to same institution	18.1	1.2
Transferred	57.3	1.6
	All 4-year	
Total	29.1	1.3
Stopout return status		
Returned to same institution	7.2	1.1
Transferred	45.0	1.5
	Public 4-year	
Total	29.4	1.4
Stopout return status		
Returned to same institution	4.9	1.1
Transferred	46.6	1.6
	Private, not-for-profit 4-year	
Total	28.1	1.3
Stopout return status		
Returned to same institution	12.8	1.1
Transferred	40.4	1.4
	Public 2-year	
Total	40.3	1.4
Stopout return status		
Returned to same institution	21.7	1.2
Transferred	64.8	1.7

*Does not include students in private, for-profit institutions; public less-than-2-year institutions; or private, not-for-profit less-than-4-year institutions (about 14 percent of beginning students).

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1989–90 Beginning Postsecondary Students Longitudinal Study, Second Follow-up (BPS:90/94), Data Analysis System.

The timing of reenrollment differed for stopouts from 4-year institutions who returned to the same institution and those who transferred (table 5). Stopouts who reenrolled in the same institution returned earlier: more than half (57 percent) returned in their second year (1990–91) compared with 40 percent of transfers. Despite their earlier return, however, stopouts who returned to the same institution were no less likely than those who transferred to be enrolled in 1994 (26 percent and 24 percent), and were equally likely to have subsequently left with no degree (42 percent and 43 percent) (figure 1). Thus, the persistence of the two groups was similar. But as indicated earlier, stopout transfers were more likely to complete short-term programs—associate's degrees and vocational certificates—while stopout returns almost exclusively earned bachelor's degrees.

It should be noted that patterns for stopouts were quite different for those who enrolled in the public 4-year sector relative to those who enrolled in the private, not-for-profit 4-year sector. As shown in figure 2 and table 6, stopouts from private, not-for-profit 4-year institutions who reenrolled in the same institution were much more likely to attain a bachelor's degree within 5 years than their counterparts who returned to public 4-year institutions (58 percent versus 18 percent). While stopouts who returned to the public 4-year sector were more likely than their counterparts in private, not-for-profit institutions to be still enrolled in 1994 (31 percent versus 15 percent), they were much more likely to have left without any credential (49 percent versus 22 percent).

Within the 4-year sector, the outcomes of the two types of stopouts (returns versus transfers) in public institutions were opposite to the outcomes of their counterparts in private, not-for-profit institutions. Those enrolled in private, not-for-profit 4-year institutions who returned to the same institution had higher attainment outcomes than those who transferred (63 percent versus 33 percent attained some credential). However, the opposite was true for stopouts in the public 4-year sector: those who transferred were more likely to attain some credential, albeit a subbaccalaureate credential, than those who returned to the same institution (34 percent versus 20 percent).

Finally, the 1994 outcomes of the beginning students who persisted to their second year illustrate the importance of the first year with respect to eventual degree attainment and long-term persistence (table 6). Among students who began in the 4-year sector and who persisted to their second year, a majority (61 percent) had completed a bachelor's degree by 1994 and an additional 15 percent were still enrolled. Fewer than one in five (17 percent) had subsequently left without attaining a credential. In contrast, first-year stopouts were far less likely to have attained any credential within 5 years, and they were only slightly more likely to be still enrolled in 1994 than first-year persisters.

Table 5—Among 1989–90 beginning students who stopped out in their first year, the percentage distribution according to the year they returned, by stopout return status for those who left in 1989–90 and first institution attended

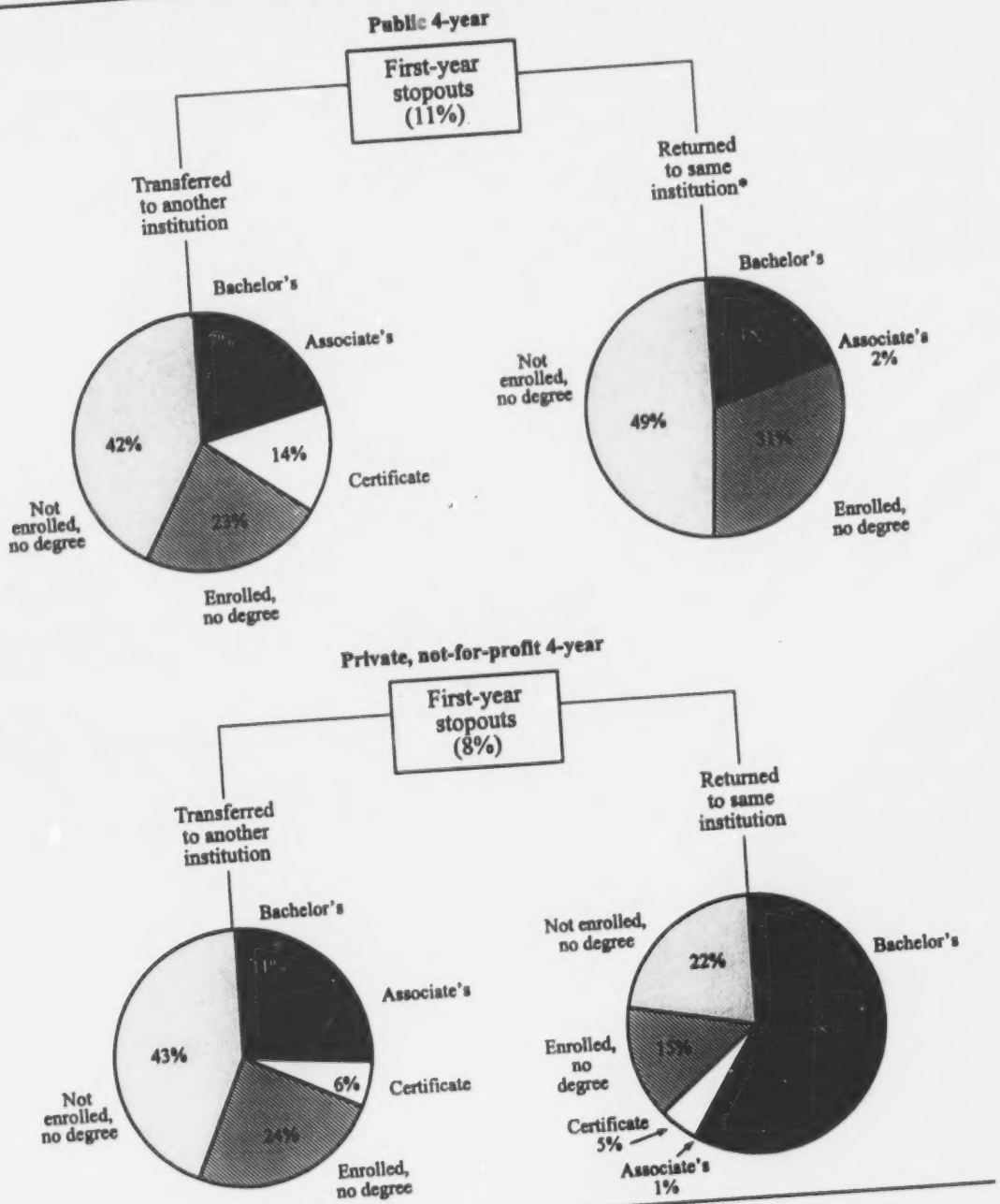
	Academic year stopouts first returned			
	1990–91	1991–92	1992–93	1993–94
		All stopouts		
Total*	35.7	44.0	12.0	8.3
Stopout return status				
Returned to same institution	47.8	41.5	6.7	4.0
Transferred	22.4	46.6	17.9	13.1
		All 4-year		
Total	46.7	36.2	10.7	6.4
Stopout return status				
Returned to same institution	56.5	35.6	5.5	2.5
Transferred	39.5	36.6	14.6	9.3
		Public 4-year		
Total	46.1	36.6	10.3	7.1
Stopout return status				
Returned to same institution	56.5	37.4	3.7	2.5
Transferred	38.7	36.1	14.9	10.3
		Private, not-for-profit 4-year		
Total	48.4	35.0	12.0	4.6
Stopout return status				
Returned to same institution	56.5	31.1	9.9	2.5
Transferred	41.9	38.2	13.6	6.3
		Public 2-year		
Total	30.8	47.5	12.6	9.2
Stopout return status				
Returned to same institution	44.9	43.5	7.1	4.5
Transferred	11.9	52.8	20.0	15.4

*Does not include students in private, for-profit institutions; public less-than-2-year institutions; or private, not-for-profit less-than-4-year institutions (about 14 percent of beginning students).

NOTE: Details may not sum to 100 due to rounding.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1989–90 Beginning Postsecondary Students Longitudinal Study, Second Follow-up (BPS:90/94), Data Analysis System.

Figure 2—Persistence and attainment outcomes in 1994 of beginning students who stopped out of 4-year institutions in their first year (1989–90), by control of institution



*Fewer than 0.01 percent obtained certificates.

NOTE: Details may not sum to 100 due to rounding.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1989–90 Beginning Postsecondary Students Longitudinal Study, Second Follow-up (BPS: 90/94), Data Analysis System.

Table 6—Percentage distribution of 1989–90 beginning students according to their highest degree attained or enrollment status in 1994, by persistence or departure status in 1989–90 and first institution attended

	Attained				No degree, enrolled in 1994	No degree, not enrolled in 1994
	Total	Certificate	Associate's degree	Bachelor's degree		
				All beginning students		
Total[1]	48.3	8.0	11.0	29.4	14.9	36.7
Persistence or departure in 1989–90						
Persisted[2]	60.5	6.9	13.3	40.2	16.5	23.0
Stopout return	28.6	9.7	10.6	8.3	21.5	49.9
Stopout transfer	42.6	30.5	9.0	3.1	20.2	37.2
				All 4-year		
Total	60.3	2.9	4.2	53.3	15.2	24.4
Persistence or departure in 1989–90						
Persisted[2]	67.8	2.6	3.9	61.3	15.1	17.1
Stopout return	32.1	1.4	1.6	29.2	26.3	41.7
Stopout transfer	34.0	11.7	14.0	8.3	23.5	42.5
				Public 4-year		
Total	54.8	3.2	4.7	46.9	18.4	26.8
Persistence or departure in 1989–90						
Persisted[2]	62.7	2.8	4.6	55.3	18.8	18.5
Stopout return	19.7	0.0	1.8	17.9	30.9	49.4
Stopout transfer	34.4	13.6	13.6	7.2	23.3	42.3
				Private, not-for-profit 4-year		
Total	71.8	2.3	3.0	66.6	8.6	19.6
Persistence or departure in 1989–90						
Persisted[2]	77.7	2.1	2.6	73.1	7.9	14.4
Stopout return	63.1	4.8	0.9	57.5	14.7	22.2
Stopout transfer	32.7	6.3	15.2	11.2	24.1	43.2
				Public 2-year		
Total	36.7	12.9	17.5	6.3	14.7	48.6
Persistence or departure in 1989–90						
Persisted[2]	50.3	13.1	26.5	10.7	18.4	31.3
Stopout return	27.4	12.5	13.7	1.3	19.9	52.7
Stopout transfer	47.9	42.0	5.9	0.0	18.1	34.0

[1]Does not include students in private, for-profit institutions; public less-than-2-year institutions; or private, not-for-profit less-than-4-year institutions (about 14 percent of beginning students).

[2]Includes a small percentage who attained a certificate in 1989–90.

NOTE: Details may not sum to 100 due to rounding. Note also that totals include stayouts which are not displayed in the table. Therefore the total percentage may not be within the range of row subgroups. The zero percentages in the table round to less than 0.01 percent.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1989–90 Beginning Postsecondary Students Longitudinal Study, Second Follow-up (BPS:90/94), Data Analysis System.

While there were also outcome differences for first-year *persisters* at public and private, not-for-profit 4-year institutions, the overall persistence differences were relatively modest (table 6). For example, 19 percent of first-year persisters attending public 4-year institutions subsequently left without any credential, compared with 14 percent of their counterparts in private, not-for-profit 4-year institutions. However, first-year persisters in private, not-for-profit institutions were more likely to have earned a bachelor's degree within 5 years than those in public institutions (73 percent versus 55 percent). At the same time, 19 percent of those in public institutions were still enrolled, compared with 8 percent in private, not-for-profit 4-year institutions, indicating that those in public institutions may have been taking longer to finish but were still working toward the bachelor's degree.

Stopout Path From Public 2-Year Institutions

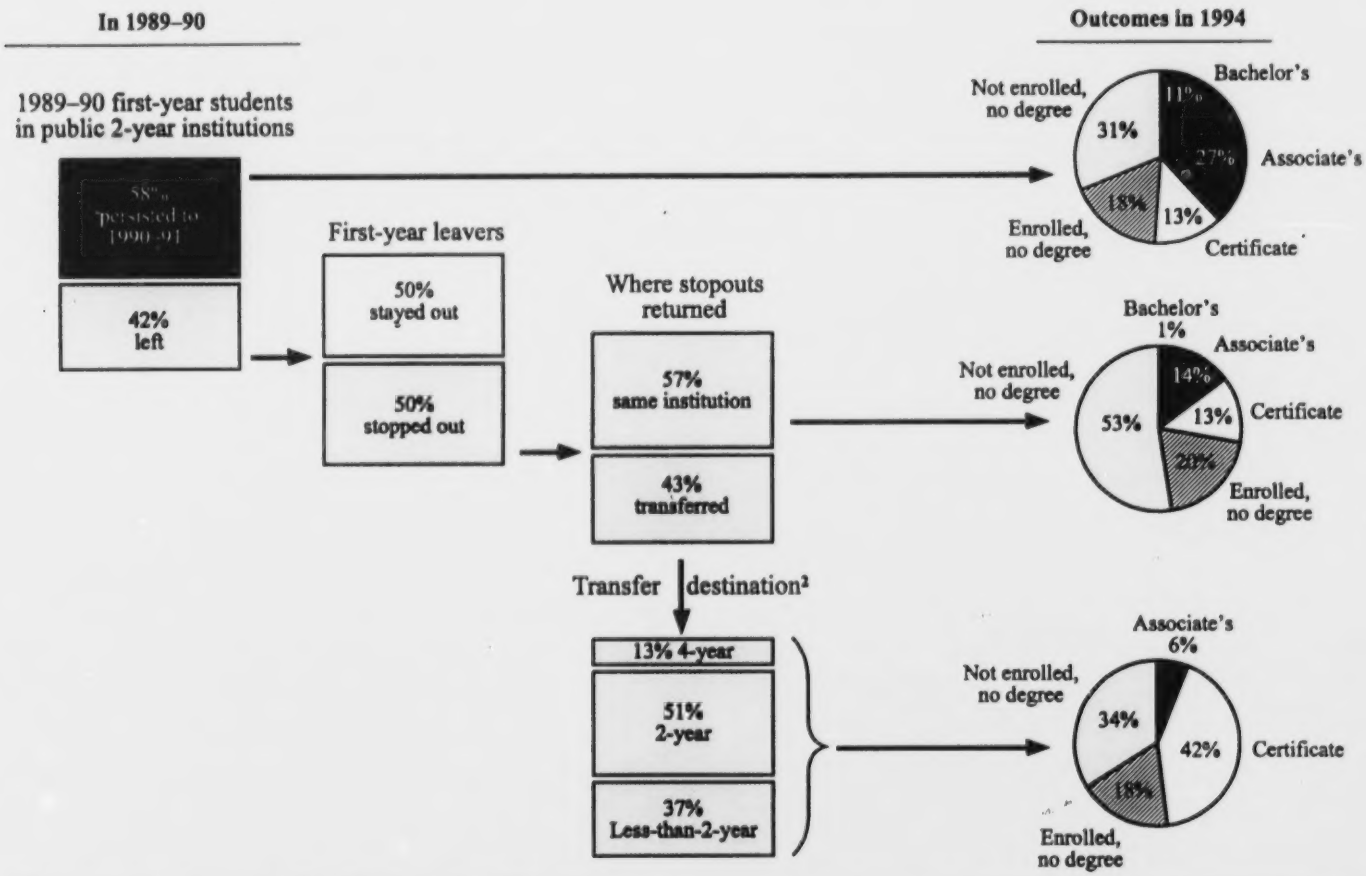
As noted earlier, a majority (63 percent) of students who left postsecondary education in their first year departed from the public 2-year sector (table 2). Within this sector, 42 percent left in their first year (figure 3). Students who left public 2-year institutions were equally likely to stay out as they were to return sometime before 1994. Among those who returned, about 57 percent reenrolled in the same institution and 43 percent transferred. Half of those who transferred stayed at the 2-year level, and 37 percent transferred to a less-than-2-year institution. The remaining 13 percent transferred to the 4-year level.

Unlike the pattern in the 4-year sector where there were no obvious differences in persistence between stopouts who returned to the same institution and those who transferred, persistence rates did differ for the two stopout groups in public 2-year colleges. Stopouts who transferred were much more likely to have attained some type of credential than those who returned to the same institution (48 percent versus 27 percent). However, those who transferred earned primarily vocational certificates (42 percent earned a vocational certificate and 6 percent earned an associate's degree), while those who returned to the same institution were as likely to earn associate's degrees as they were to earn vocational certificates (14 percent and 13 percent, respectively). Those who returned to the same institution were *more* likely to have left with no credential (53 percent) than the stopouts who transferred (34 percent). Thus, stopouts who transferred from public 2-year colleges had higher overall persistence rates than those who returned to the same institution, but they tended to earn short-term vocational credentials rather than associate's degrees.

Among stopouts who transferred from public 2-year colleges, those who reenrolled in the same institution returned earlier than stopouts who transferred (table 5): 45 percent reenrolled the subsequent year (i.e., 1990–91), compared with 12 percent of transfers.

The frequency with which stopouts who transferred from public 2-year colleges earned vocational certificates suggests that many of these students may have initially enrolled with an associate's degree goal and later determined that a specific vocational program would better suit them. They subsequently enrolled in another institution—either at the 2-year or less-than-2-year level—in order to pursue this objective. This is supported by the fact that 47 percent of stopout transfers who reported having an associate's degree objective in 1989–90 earned a vocational certificate by 1994, compared with 11 percent of their counterparts who returned to the same institution (table 7).

Figure 3— Stopout path for 1989–90 beginning students in public 2-year institutions and outcomes in 1994 for first-year persisters and stopouts



[1]Includes 2.1 percent who obtained a certificate in 1989–90.

[2]By 1994, fewer than 0.01 percent of stopout transfers had attained a bachelor's degree.

NOTE: Details may not sum to 100 due to rounding.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1989–90 Beginning Postsecondary Students Longitudinal Study, Second Follow-up (BPS:90/94), Data Analysis System.

BEST COPY AVAILABLE

Table 7—Among first-year stopouts from public 2-year institutions who had an associate's degree (AA) objective in 1989–90, the percentage distribution according to degree attainment in 1994, by stopout return status

	Attainment			No degree, enrolled in 1994	No degree, not enrolled in 1994
	Certificate	Associate's degree	Bachelor's degree		
Total	27.5	13.5	1.5	13.2	44.3
Stopouts with AA objective in 1989–90					
Returned to same institution	11.4	18.2	2.6	18.1	49.6
Transferred	47.0	7.9	0.0	7.2	37.9

NOTE: Details may not sum to 100 due to rounding. The zero percentages in the table round to less than 0.01 percent.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1989–90 Beginning Postsecondary Students Longitudinal Study, Second Follow-up (BPS:90/94), Data Analysis System.

When comparing the outcomes of first-year persisters with those who stopped out, stopout transfers from public 2-year institutions and those who *persisted* to their second year had similar persistence and attainment rates (figure 3 and table 6). About one-half of each group attained some credential, and 18 percent were still enrolled. In contrast, first-year persisters in the 4-year sector were far more likely than stopout transfers to attain a credential (68 percent versus 34 percent). In the public 2-year sector, those who persisted to their second year primarily earned associate's degrees (27 percent) and bachelor's degrees (11 percent), while those who transferred earned vocational certificates (42 percent). In other words, while similar proportions of both first-year persisters and first-year stopouts who transferred from the public 2-year sector may have earned postsecondary credentials, stopout transfers were more likely than first-year persisters to earn postsecondary credentials that require a shorter time to complete.

Who Stops Out and Who Stays Out?

This part of the analysis attempts to distinguish between students who return to school after leaving their first year and those who stay out. In doing so, it asks the following question: Are stopouts more or less likely than stayouts to have attributes associated with early departure? It begins with a multivariate analysis examining factors related to early departure.

Controlling for Factors Related to Early Departure

When determining the association between student attributes—whether background characteristics or enrollment behavior—and early departure from postsecondary education, the interrelationship of variables related to persistence needs to be taken into account. For example, students who attend school on a part-time basis are more likely than those who attend full time to leave in their first year. However, there are other factors related to part-time attendance that may affect persistence. Most notably is the likelihood of working full time while attending part time (Horn and Berktold 1998). To control for the interrelationship of variables related to persistence, this analysis used a regression model.[8] The dependent variable is defined as the likelihood of leaving school in the first year.[9] The model included a number of independent variables that represent various aspects of students' background and family characteristics as well as their first-year college experiences. Two regressions were run: one for students leaving the 4-year sector, and the other for those leaving the public 2-year sector. Independent variables included in the full models are as follows (detailed definitions of all the variables can be found in the glossary in appendix A):

- Student background characteristics (gender, race–ethnicity, age, socioeconomic status (SES), first generation to attend college);
- Nontraditional characteristics (delayed enrollment a year or more after high school, worked full time, financially independent, had children);
- Student engagement and satisfaction with their academic program (full- or part-time attendance, academic integration score, satisfaction index score);
- Student performance (GPA);
- Financial aid status (grant/loan combinations); and

[8]See appendix B for details of methods used.

[9]This is a dichotomous dependent variable indicating whether or not they left.

- Institution control (public versus private, not-for-profit) for 4-year sector model only.

4-Year Sector

The results for the 4-year sector are displayed in table 8. Column one shows the percentages of students who left in their first year for each independent variable category.[10] Column two represents the corresponding percentages after being adjusted for the covariation of the independent variables included in the model (i.e., based on the regression equation). Asterisks indicate when a particular group differs significantly from the comparison group (shown in italics).

Several factors were significantly associated with early departure from a 4-year institution after controlling for related variables. One significant factor in early departure was having a low to failing cumulative GPA (under 2.0)—a group that would include academic dismissals—relative to students with higher grades. As shown in the table, before adjustment, 32 percent with GPAs under 2.0 interrupted their enrollment, compared with 10 percent with higher GPAs. After adjustment, the corresponding percentages were 33 percent and 11 percent. Students who had no GPA reported—40 percent of whom left in their first year—would include those who did not attend long enough to complete a term and have grades reported.

A similar result was found for timing of first enrollment in postsecondary education after graduating from high school. Whether it is due to lack of academic readiness to attend college, having conflicting responsibilities, or simply not having the desire to attend immediately, delaying postsecondary enrollment by a year or more after high school is strongly associated with early departure. In this analysis, 40 percent of such students departed early, compared with 13 percent of immediate entrants. After adjustment, the estimates were still significantly different (33 percent versus 14 percent).

Consistent with Tinto's (1993) theory of academic integration, students who were less able to engage with their academic program were more likely to leave early, even when controlling for other factors such as low GPAs. In this analysis, academic integration was based on a scale that measured how involved students were with faculty and their peers.[11] A low academic integration index score (relative to a high one) contributed to early departure. Working full time while enrolled, which may hinder academic integration, was also associated with early departure, as

[10]Due to the strong intercorrelation of the student characteristics age and dependency status with the enrollment characteristics delayed enrollment and part-time status, the age and dependency status variables were removed from the model.

[11]The academic index score is based on student responses with respect to how often (never, once, sometimes, often) they reported the following: meeting with faculty outside of class, meeting with an academic advisor, having informal or social contact with faculty, participating in a student study group, using student assistant centers, and attending career-related lectures. The response to each item was coded from 1–4 and the mean was taken. Students' scores were then divided into quartiles representing low, medium (middle two quartiles), and high scores.

Table 8—Percentage of 1989–90 beginning students who interrupted their enrollment from a 4-year institution in their first year and the adjusted percentage after accounting for the covariation of variables listed in the table

	Unadjusted percentage[1]	Adjusted percentage[2]	WLS coefficient[3]	Standard error[4]
Total	15.9	15.9	6.8	2.9
Academic integration index score				
Low score	27.1*	21.6*	9.1	3.0
Moderate score	14.7	17.0*	4.5	2.0
High score	*12.3*	*12.5*	†	†
Financial aid combination				
Grants, no loans	15.8	17.0	1.8	2.4
Loans	14.1	16.1	0.9	2.4
No aid	*16.6*	*15.2*	†	†
Attendance status first enrolled				
Part time	34.7*	21.3	6.0	3.4
Full time	*13.6*	*15.3*	†	†
Race–ethnicity				
Black, non-Hispanic	20.1	16.7	0.2	3.5
Hispanic	12.5	11.1	-5.4	4.4
Asian/Pacific Islander	7.3*	9.6	-6.9	4.4
American Indian/Alaskan Native	—	—	-7.1	13.5
White, non-Hispanic	*16.1*	*16.5*	†	†
Control of 4-year institution				
Private, not-for-profit	12.5*	15.4	-0.8	2.1
Public	*17.5*	*16.1*	†	†
Timing of enrollment				
Delayed enrollment	39.7*	33.1*	19.4	3.1
No delay	*12.8*	*13.6*	†	†
Cumulative GPA in 1989–90				
Under 2.0	31.6*	32.7*	21.4	2.4
2.0 or higher	*10.0*	*11.3*	†	†
Not reported	40.4*	39.4*	28.1	6.1
Gender				
Female	15.7	16.5	1.3	1.8
Male	*16.1*	*15.2*	†	†
Hours worked while enrolled				
Did not work	14.4*	15.8*	-6.2	2.7
15 or fewer hours per week	9.4*	11.1*	-10.8	2.8
16–34 hours per week	14.3*	14.4*	-7.6	2.4
35 or more hours per week	*24.8*	*22.0*	†	†

Table 8—Percentage of 1989–90 beginning students who interrupted their enrollment from a 4-year institution in their first year and the adjusted percentage after accounting for the covariation of variables listed in the table—Continued

	Unadjusted percentage[1]	Adjusted percentage[2]	WLS coefficient[3]	Standard error[4]
Parents' highest education				
High school or less (First generation)	23.4*	19.1*	6.1	2.4
Some postsecondary education	17.4*	17.7*	4.7	2.4
Bachelor's degree or higher	*10.0*	*13.0*	†	†
Satisfaction index score				
Low	16.2	17.6	1.5	2.4
Moderate	12.5	14.6	-1.6	2.1
High	*14.7*	*16.2*	†	†
Socioeconomic status				
Low quartile	29.8*	20.6	5.9	4.5
Middle quartiles	20.2*	17.0	2.2	2.2
High quartile	*11.8*	*14.7*	†	†

—Sample too small for reliable estimate.

*$p \leq .05$.

†Not applicable for the reference group.

[1]The estimates are from the BPS:90/94 Data Analysis System.

[2]The percentages are adjusted for differences associated with other variables in the table (see appendix B).

[3]Weighted least squares (WLS) coefficient, multiplied by 100 to reflect percentage (see appendix B).

[4]Standard error of WLS coefficient, adjusted for design effect, multiplied by 100 to reflect percentage (see appendix B).

NOTE: The italicized group in each category is the reference group being compared.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Beginning Postsecondary Students Longitudinal Study, Second Follow-up (BPS:90/94), Data Analysis System.

compared with working less or not working at all. However, even when controlling for other factors including academic integration, just over one-fifth of students who worked full time while enrolled left school before their second year, compared with 11 to 14 percent who worked part time and 16 percent who did not work.

Students whose parents were college graduates departed at lower rates than students whose parents had less education. For example, before adjustment, 23 percent of first-generation college students and 10 percent whose parents were college graduates left before the second year. After adjustment, the difference was still significant (19 percent versus 13 percent). The relationship between parents' education and students' early departure may be due to several factors. First-generation college students and students whose parents have limited postsecondary education may have a harder time adjusting to college life than their peers with college-educated parents.

They may come from homes where college is not a high priority, especially if they need to work and contribute to the economic well being of the family. They also have less opportunity to be guided by their parents' own college experiences.[12] Thus, having parents with no postsecondary education was a significant indicator of early departure, even after controlling for SES and academic integration.

A number of factors were significantly associated with early departure before adjusting for related variables, but were not significant afterwards. This may occur when variables are *indirectly* associated with early departure by virtue of their association with other variables that directly affect the outcome. For example, before adjustment, students in the lowest SES quartile were more likely than students in higher quartiles to leave school early. However, SES is associated with other variables in the model. For example, low-SES students are also more likely to delay their enrollment in postsecondary education a year or more after high school graduation and to have less-educated parents (i.e., high school or less).[13] As discussed previously, both delayed enrollment and first-generation college status are associated with early departure. Therefore, once other factors including delayed enrollment and parents' education were controlled for in the model, being in the lowest SES quartile was no longer significantly associated with early departure.

Similarly, attending a public 4-year college versus a private, not-for-profit institution and attending part time versus full time were also associated with higher early departure rates before but not after adjustment. Both of these attributes, however, are associated with academic integration index scores. That is, students in public 4-year institutions are more likely than those private, not-for-profit 4-year institutions to have low academic integration scores. The same is true for students enrolled part time relative to full time.[14] Once other factors including academic integration were held constant, the departure rates for students in public institutions and students attending part time were no longer significantly different from their counterparts.

Public 2-Year Sector

The regression results based on students enrolled in the public 2-year sector are displayed in table 9. One difference between this regression model and the model used for students in the 4-year sector is the inclusion of the nontraditional status variable instead of the individual com-

[12]For a detailed study of first-generation college students, see Nuñez and Cuccaro-Alamin (1998).

[13]BPS:89/90 DAS. For example, nearly half of low-SES students delayed their enrollment, compared with 16 percent of middle-SES and 6 percent of high-SES students.

[14]For example, 15 percent of students enrolled in public 4-year institutions had low academic integration scores, compared with 8 percent in private, not-for-profit institutions. Similarly, 41 percent of part-time students had low scores, compared with 17 percent of full-time students (BPS:89/94 Data Analysis System).

ponent variables that make up nontraditional classification (delayed enrollment, part-time attendance, full-time employment while enrolled, financial independence, and having children).[15] In a model that included the individual components, none were significantly associated with early departure once all independent variables were held constant. However, when the nontraditional status variable was included in the model in lieu of the individual components, students with two or more of these characteristics (moderately to highly nontraditional) were more likely to leave early than students with one or none of the characteristics (traditional or minimally nontraditional). This was true both before adjustment (55 versus 30 percent) and after adjustment (52 versus 33 percent).

As was true for the 4-year sector, students with GPAs under 2.0 were more likely to leave early than students with higher grades as were students with a low academic integration score compared relative to a high score. The only other attribute that remained a significant indicator of early departure after holding other variables constant was having no degree objective relative to having an associate's degree objective. However, students with no specific degree intentions may have fulfilled their educational objective while they were enrolled and their leaving may not necessarily indicate dropping out.

There were a number of variables associated with early departure from the public 2-year sector before adjustment for related variables, such as age, SES, and first-generation status, but these were no longer significant after adjustment. However, since all of these variables are associated with being nontraditional (Horn 1996), once other variables including nontraditional status were held constant, these factors were no longer significant predictors of early departure. While the proportion of students leaving before their second year with low academic integration scores appears different from the proportion with high scores, even after adjustment, the estimates were no longer statistically different. However, it should be noted that the sample of public 2-year college students was small, and as shown in the table, the standard errors of the regression coefficients are relatively large.

Stopouts Versus Stayouts

The next step of the analysis explores how stopouts differed from stayouts with respect to variables associated with early departure. It revealed a number of instances where differences occurred, and in some cases, the patterns were found at both the 2-year and 4-year levels.

[15]See glossary in appendix A for definition under entry "ATRS8990."

Table 9—Percentage of 1989–90 beginning students who interrupted their enrollment from a public 2-year institution in their first year and the adjusted percentage after accounting for the covariation of variables listed in the table

	Unadjusted percentage[1]	Adjusted percentage[2]	WLS coefficient[3]	Standard error[4]
Total	42.4	42.4	9.3	10.8
Index of academic integration				
Low score	57.0*	51.5*	18.5	8.7
Moderate score	35.6*	39.3	6.3	8.2
High score	*20.1*	*33.0*	†	†
Age as of 12/31/89				
18 or younger	*30.5*	*39.6*	†	†
19–23	50.9*	47.8	8.1	7.7
24–29	51.0*	41.0	1.4	13.0
30 or older	54.2*	39.4	-0.3	11.5
Nontraditional status				
Traditional or minimally nontraditional	*29.6*	*33.0*	†	†
Moderately to highly nontraditional	55.0*	51.7*	18.8	8.1
Race–ethnicity				
Black, non-Hispanic	55.1	55.7	13.4	11.0
Hispanic	41.0	40.6	-1.7	9.8
Asian/Pacific Islander	—	—	-20.9	16.3
American Indian/Alaskan Native	—	—	-13.1	35.3
White, non-Hispanic	*42.5*	*42.3*	†	†
Degree objective				
No degree	66.0*	64.9*	24.3	12.0
Certificate	58.3*	56.4	15.8	9.4
Associate's	*39.1*	*40.6*	†	†
Bachelor's or higher	27.3*	32.7	-7.9	7.4
Cumulative GPA in 1989–90				
Not reported	56.3*	56.4	20.0	10.3
Under 2.0	53.7	60.2*	23.7	8.2
2.0 or higher	*34.8*	*36.5*	†	†
Gender				
Female	40.3	40.9	-3.0	6.1
Male	*44.6*	*43.9*	†	†
Parents' education				
High school or less (first generation)	47.7*	46.7	10.5	8.4
Some postsecondary education	38.3	40.5	4.3	9.1
Bachelor's degree or higher	*32.9*	*36.2*	†	†

Table 9—Percentage of 1989–90 beginning students who interrupted their enrollment from a public 2-year institution in their first year and the adjusted percentage after accounting for the covariation of variables listed in the table—Continued

	Unadjusted percentage[1]	Adjusted percentage[2]	WLS coefficient[3]	Standard error[4]
Satisfaction index score				
Low	35.1	41.7	1.8	9.0
Moderate	43.3	49.3	9.4	7.2
High	*39.0*	*39.8*	†	†
Socioeconomic status				
Low quartile	49.3*	38.4	-7.5	11.3
Middle quartiles	45.3*	41.8	-4.2	8.2
High quartile	*33.4*	*46.0*	†	†

—Sample too small for reliable estimate.

*$p \leq .05$.

†Not applicable for the reference group.

[1]The estimates are from the BPS:90/94 Data Analysis System.

[2]The percentages are adjusted for differences associated with other variables in the table (see appendix B).

[3]Weighted least squares (WLS) coefficient, multiplied by 100 to reflect percentage (see appendix B).

[4]Standard error of WLS coefficient, adjusted for design effect, multiplied by 100 to reflect percentage (see appendix B).

NOTE: The italicized group in each category is the reference group being compared.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Beginning Postsecondary Students Longitudinal Study, Second Follow-up (BPS:90/94), Data Analysis System.

Student Characteristics

Regardless of where undergraduates first enrolled, characteristics associated with nontraditional students distinguished those who stopped out from those who stayed out. Within the 4-year sector, more than three-fourths (79 percent) of stopouts were either traditional or minimally nontraditional, compared with about half (52 percent) of stayouts (table 10a). Even though nontraditional students are concentrated in the public 2-year sector, stopouts within this sector were more likely to be traditional than stayouts: about 42 percent were traditional or minimally nontraditional, compared with 27 percent of stayouts. Individual characteristics that distinguished stopouts from stayouts regardless of institutional sector included age, marital status, being parents, and the prevalence of working full time while enrolled. Specifically, stayouts were more likely than stopouts to be 30 or older, married, to have children living in their home, and to be working full time while enrolled (tables 10a and 10b).

Students who stayed out after leaving were also more likely than stopouts to be the first generation of their immediate family to attend college. For example, more than half (55 percent) of students in 4-year institutions who stayed out had parents with no more than a high school

Table 10a—Percentage distribution of 1989–90 beginning students who interrupted their enrollment in their first year, according to selected demographic characteristics, by departure status in 1989–90 and first institution attended

	All 4-year		Public 2-year	
	Stopped out	Stayed out	Stopped out	Stayed out
Total[1]	100.0	100.0	100.0	100.0
Nontraditional status				
Traditional or minimally nontraditional	79.1	52.3	42.0	27.4
Moderately nontraditional	15.0	27.8	31.9	35.1
Highly nontraditional	5.9	20.0	26.2	37.5
First-generation college students (Parents' highest education)				
High school or less	35.1	54.8	51.0	66.0
Some postsecondary education	28.2	27.6	21.4	18.7
Bachelor's degree or higher	36.7	17.6	27.6	15.4
Age				
18 or younger	64.4	40.3	38.7	24.3
19–23	30.3	35.5	42.7	36.6
24–29	2.9	9.0	8.5	13.3
30 or older	2.5	15.2	10.2	25.7
Marital status				
Never married	94.5	75.8	82.0	55.2
Married	4.1	17.2	13.7	34.5
Divorced/separated/widowed	1.5	6.9	4.3	10.3
Number of children				
No children	97.4	79.3	83.2	67.0
One or more children	2.7	20.7	16.8	33.0
Percent worked full time while enrolled	32.8	46.6	41.7	54.9
Average hours worked per week[2]	29.6	34.7	33.1	35.2

[1]Does not include students in private, for-profit institutions; public less-than-2-year institutions; or private, not-for-profit less-than-4-year institutions (about 14 percent of beginning students).
[2]Among those who worked.

NOTE: Details may not sum to totals due to rounding (sums vertically).

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1989–90 Beginning Postsecondary Students Longitudinal Study, Second Follow-up (BPS:90/94), Data Analysis System.

Table 10b—Percentage distribution of 1989–90 beginning students in 4-year institutions who interrupted their enrollment in their first year, according to selected demographic characteristics, by departure status in 1989–90 and first institution attended

	Public		Private, not-for-profit	
	Stopped out	Stayed out	Stopped out	Stayed out
Total[1]	100.0	100.0	100.0	100.0
Nontraditional status				
Traditional or minimally nontraditional	78.5	52.7	80.9	50.8
Moderately nontraditional	15.2	31.1	14.5	16.9
Highly nontraditional	6.4	16.2	4.6	32.3
First-generation college students (Parents' highest education)				
High school or less	37.9	53.2	27.4	60.0
Some postsecondary education	27.2	30.9	30.9	16.8
Bachelor's degree or higher	34.9	15.9	41.7	23.2
Age				
18 or younger	64.1	40.0	65.3	41.3
19–23	31.2	38.1	27.9	27.1
24–29	2.7	7.5	3.3	14.0
30 or older	2.0	14.5	3.6	17.7
Marital status				
Never married	95.1	79.3	92.6	64.7
Married	3.4	15.3	5.9	23.6
Divorced/separated/widowed	1.5	5.4	1.5	11.8
Number of children				
No children	97.7	81.8	96.3	71.1
One or more children	2.3	18.2	3.7	28.9
Percent worked full time while enrolled	35.5	48.5	25.4	40.4
Average hours worked per week[2]	30.5	35.7	27.0	31.3

[1]Does not include students in private, for-profit institutions; public less-than-2-year institutions; or private, not-for-profit less-than-4-year institutions (about 14 percent of beginning students).
[2]Among those who worked.

NOTE: Details may not sum to totals due to rounding (sums vertically).

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1989–90 Beginning Postsecondary Students Longitudinal Study, Second Follow-up (BPS:90/94), Data Analysis System.

education, compared with just over a third (35 percent) who stopped out (table 10a). The same pattern was found for students in the public 2-year sector: 51 percent of stopouts were first-generation college students, compared with 66 percent of stayouts.

Socioeconomic status was also associated with whether students from the 4-year sector stopped out or stayed out, but this was not the case for students in the public 2-year sector (table 11a). About one in five (22 percent) students in the 4-year sector who stayed out were from the lowest SES quartile, compared with 4 percent of stopouts. These differences were found for students at both public and private, not-for-profit 4-year institutions (table 11b). In the public 2-year sector, on the other hand, 18 percent of stopouts and 25 percent of stayouts were from the lowest SES quartile, a difference that is not statistically significant.

Racial–ethnic group differences were found between stopouts and stayouts for both students in the public 2-year sector and in the 4-year private, not-for-profit sector, but not for those in the public 4-year sector (tables 11a and 11b). In public 2-year colleges and in private, not-for-profit 4-year colleges, stayouts were *more* likely than stopouts to be white. In community colleges, stayouts were *less* likely than stopouts to be Hispanic (6 percent versus 15 percent), while in private, not-for-profit 4-year institutions, stayouts were less likely than stopouts to be black (4 percent versus 10 percent).

Educational Experiences of Students Who Left the 4-Year Sector

When examining academic experiences of first-year students, the results suggest that compared to those who stayed out, first-year stopouts from the 4-year sector were more integrated in their academic program than stayouts (as measured by their enrollment intensity and level of contact with faculty and other students), but there was some indication they were less satisfied with the institution they were attending.

With respect to enrollment intensity, stopouts were more likely than stayouts to attend school on a full-time basis (85 percent versus 68 percent) (table 12). While the cumulative GPAs of stopouts and stayouts did not differ markedly (table 13), stopouts were more likely than stayouts to report "sometimes or often" contacting faculty members outside of class (52 percent versus 35 percent; table 14a). Similarly, stopouts were more likely to "sometimes or often" meet with their advisor to discuss academic plans (62 percent versus 54 percent). More differences in academic integration indicators were evident among students in private, not-for-profit 4-year institutions, where stopouts were more likely than stayouts to attend career-related lectures, have contact with faculty outside of class, participate in study groups, and meet with their advisors.

Table 11a—Percentage distribution of 1989–90 beginning students who interrupted their enrollment in their first year, according to socioeconomic status and race–ethnicity, by departure status in 1989–90 and first institution attended

	All 4-year		Public 2-year	
	Stopped out	Stayed out	Stopped out	Stayed out
Total*	100.0	100.0	100.0	100.0
Socioeconomic status				
Low quartile	4.0	21.7	18.1	25.3
Middle quartiles	45.4	49.4	54.1	54.9
High quartile	50.6	28.9	27.8	19.8
Race–ethnicity				
White, non-Hispanic	84.5	83.6	68.8	83.7
Black, non-Hispanic	9.6	10.4	14.1	7.8
Hispanic	3.8	3.1	15.1	6.4
Asian/Pacific Islander	2.0	2.2	1.3	1.6
American Indian/Alaskan Native	0.0	0.7	0.7	0.5

*Does not include students in private, for-profit institutions; public less-than-2-year institutions; or private, not-for-profit less-than-4-year institutions (about 14 percent of beginning students).

NOTE: Details may not sum to totals due to rounding (sums vertically). The zero percentages in the table round to less than 0.01 percent.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1989–90 Beginning Postsecondary Students Longitudinal Study, Second Follow-up (BPS:90/94), Data Analysis System.

Table 11b—Percentage distribution of 1989–90 beginning students in 4-year institutions who interrupted their enrollment in their first year, according to socioeconomic status and race–ethnicity, by departure status in 1989–90 and first institution attended

	Public		Private, not-for-profit	
	Stopped out	Stayed out	Stopped out	Stayed out
Total*	100.0	100.0	100.0	100.0
Socioeconomic status				
Lowest quartile	3.2	20.5	6.3	25.7
Middle quartiles	47.9	52.5	38.7	39.1
High quartile	48.9	27.0	55.0	35.3
Race–ethnicity				
White, non-Hispanic	86.7	81.5	78.6	90.3
Black, non-Hispanic	9.4	12.4	10.2	3.9
Hispanic	3.3	2.3	5.4	5.9
Asian/Pacific Islander	0.6	2.9	5.9	0.0
American Indian/Alaskan Native	0.0	0.9	0.0	0.0

*Does not include students in private, for-profit institutions; public less-than-2-year institutions; or private, not-for-profit less-than-4-year institutions (about 14 percent of beginning students).

NOTE: Details may not sum to totals due to rounding (sums vertically). The zero percentages in the table round to less than 0.01 percent.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1989–90 Beginning Postsecondary Students Longitudinal Study, Second Follow-up (BPS:90/94), Data Analysis System.

Table 12—Percentage distribution of 1989–90 beginning students according to attendance intensity, by persistence or departure status in 1989–90 and first institution attended

	Full-time	Part-time
	All beginning students	
Total[1]	70.4	29.6
Persistence or departure in 1989–90		
Persisted[2]	79.9	20.1
Stopout	48.9	51.1
Stayout	51.9	48.1
	All 4-year	
Total	90.6	9.4
Persistence or departure in 1989–90		
Persisted[2]	92.7	7.3
Stopout	85.3	14.7
Stayout	67.5	32.5
	Public 4-year	
Total	88.9	11.1
Persistence or departure in 1989–90		
Persisted[2]	91.1	8.9
Stopout	83.4	16.6
Stayout	69.0	31.0
	Private, not-for-profit 4-year	
Total	94.2	5.8
Persistence or departure in 1989–90		
Persisted[2]	96.0	4.0
Stopout	90.3	9.7
Stayout	62.8	37.2
	Public 2-year	
Total	48.5	51.5
Persistence or departure in 1989–90		
Persisted[2]	59.4	40.6
Stopout	29.0	71.0
Stayout	37.9	62.1

[1]Does not include students in private, for-profit institutions; public less-than-2-year institutions; or private, not-for-profit less-than-4-year institutions (about 14 percent of beginning students).

[2]Includes a small percentage who attained a certificate in 1989–90.

NOTE: Details may not sum to 100 due to rounding.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1989–90 Beginning Postsecondary Students Longitudinal Study, Second Follow-up (BPS:90/94), Data Analysis System.

BEST COPY AVAILABLE

Table 13—Percentage of 1989–90 beginning students with a first-year grade point average (GPA) of 3.0 or higher and the average GPA, by persistence or departure status in 1989–90 and first institution attended

	Percent with a GPA of 3.0 or higher	Average GPA
	All beginning students	
Total[1]	37.7	2.62
Persistence or departure in 1989–90		
Persisted[2]	40.5	2.71
Stopout	27.5	2.30
Stayout	34.7	2.53
	All 4-year	
Total	37.2	2.64
Persistence or departure in 1989–90		
Persisted[2]	39.8	2.72
Stopout	19.9	2.16
Stayout	26.8	2.16
	Public 4-year	
Total	34.1	2.57
Persistence or departure in 1989–90		
Persisted[2]	36.9	2.66
Stopout	14.8	2.03
Stayout	26.6	2.11
	Private, not-for-profit 4-year	
Total	44.1	2.80
Persistence or departure in 1989–90		
Persisted[2]	45.7	2.84
Stopout	33.8	2.52
Stayout	27.3	2.35
	Public 2-year	
Total	38.2	2.60
Persistence or departure in 1989–90		
Persisted[2]	41.5	2.70
Stopout	29.9	2.34
Stayout	36.9	2.53

[1]Does not include students in private, for-profit institutions; public less-than-2-year institutions; or private, not-for-profit less-than-4-year institutions (about 14 percent of beginning students).
[2]Includes a small percentage who attained a certificate in 1989–90.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1989–90 Beginning Postsecondary Students Longitudinal Study, Second Follow-up (BPS:90/94), Data Analysis System.

Table 14a—Percentage of 1989–90 beginning students who reported "sometimes or often" participating in various academic activities, by persistence or departure status in 1989–90 and first institution attended

	Attended career-related lectures	Had contact with faculty outside of class	Used student assistance centers	In study groups with other students	Met advisor concerning academic plans	Talked about academic matters with faculty
			All beginning students			
Total[1]	33.3	44.4	18.1	58.3	57.2	66.7
Persistence or departure in 1989–90						
Persisted[2]	36.8	47.4	20.9	64.6	62.6	72.7
Stopout	25.4	41.7	13.0	47.6	51.3	63.4
Stayout	23.6	32.3	9.7	38.3	38.3	39.1
			All 4-year			
Total	40.1	52.0	23.7	70.6	67.5	75.2
Persistence or departure in 1989–90						
Persisted[2]	40.9	53.3	24.8	72.9	69.1	77.5
Stopout	38.9	51.5	19.7	63.4	62.2	69.4
Stayout	31.1	34.9	15.9	51.3	53.5	52.5
			Public 4-year			
Total	35.5	46.3	21.2	67.9	63.7	72.5
Persistence or departure in 1989–90						
Persisted[2]	36.0	47.1	21.9	69.9	65.2	75.0
Stopout	35.3	48.2	17.9	62.8	59.4	65.7
Stayout	30.0	33.2	17.0	51.7	52.2	51.9
			Private, not-for-profit 4-year			
Total	49.6	63.9	29.1	76.3	75.3	81.0
Persistence or departure in 1989–90						
Persisted[2]	50.4	65.4	30.3	78.7	76.7	82.4
Stopout	48.7	60.5	24.6	65.0	69.9	79.2
Stayout	34.5	40.3	12.2	50.2	58.0	54.1
			Public 2-year			
Total	26.6	37.1	12.7	46.4	47.2	58.5
Persistence or departure in 1989–90						
Persisted[2]	31.1	39.0	15.3	52.8	53.4	66.0
Stopout	19.2	37.1	9.9	40.2	46.3	60.7
Stayout	21.5	31.6	8.1	34.8	30.9	35.6

[1]Does not include students in private, for-profit institutions; public less-than-2-year institutions; or private, not-for-profit less-than-4-year institutions (about 14 percent of beginning students).

[2]Includes a small percentage who attained a certificate in 1989–90.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1989–90 Beginning Postsecondary Students Longitudinal Study, Second Follow-up (BPS:90/94), Data Analysis System.

Table 14b displays the distribution of students relative to their academic integration index scores, a measure based on all the integration items displayed in table 14a. Stayouts were much more likely than stopouts to have a low index score when both 4-year public and private, not-for-profit sectors are considered (30 percent versus 17 percent). However, only in the private, not-for-profit sector is the difference between the proportions with low scores for stopouts and stayouts statistically significant (12 percent versus 34 percent). In the private, not-for-profit 4-year sector, stopouts were also more likely than stayouts to avail themselves of academic counseling services (79 percent versus 63 percent) (table 15). Thus, it appears that differences in academic engagement between stopouts and stayouts are more apparent for students in private, not-for-profit institutions than for those in public 4-year institutions. This result may be related to the findings discussed earlier showing that stopouts who returned to private, not-for-profit institutions were more likely to attain bachelor's degrees than those who returned to public institutions (see figure 3). Perhaps their early engagement with the institution played a role in the ability of students attending private, not-for-profit institutions to complete a degree. Alternatively, students who begin in a private, not-for-profit institution may be more sure of their educational path than those who start in public institutions.

Though stopouts from the 4-year sector appeared more integrated in their academic program, they were less likely than stayouts to report being highly satisfied with their institution (table 16). About 40 percent of stopouts had a high satisfaction index score, compared with roughly half (56 percent) of stayouts. This finding held for students in public 4-year institutions (42 versus 60 percent), but was not significant for students in private, not-for-profit institutions (34 percent and 42 percent).

Stopouts and stayouts in the 4-year sector also differed in how they financed their education program (table 17). Stayouts were more likely to receive aid (reflecting their lower SES relative to stopouts), but among those who received aid, stopouts were more likely to borrow (53 percent versus 38 percent).[16] Willingness to borrow to pay for one's education may reflect a greater confidence in one's ability to finish school and pay back the loan. On the other hand, students who borrowed may simply have been more motivated to return to school in order to defer paying the loan.

[16]This result was found only for the aggregated 4-year sector; both public and private, not-for-profit institutions had small sample sizes and large standard errors and when broken out, neither contrast was significant.

Table 14b—Percentage distribution of 1989–90 beginning students according to their academic integration index score,[1] by persistence or departure status in 1989–90 and first institution attended

	Low score	Moderate score	High score
		All beginning students	
Total[2]	24.4	46.8	28.9
Persistence or departure in 1989–90			
Persisted[3]	17.5	48.8	33.7
Stopout	31.6	49.3	19.1
Stayout	51.9	33.0	15.2
		All 4-year	
Total	12.9	48.6	38.5
Persistence or departure in 1989–90			
Persisted[3]	11.1	48.3	40.6
Stopout	17.4	51.4	31.2
Stayout	29.5	48.6	22.0
		Public 4-year	
Total	15.1	51.0	33.9
Persistence or departure in 1989–90			
Persisted[3]	13.4	50.8	35.8
Stopout	19.5	51.9	28.6
Stayout	28.1	52.2	19.8
		Private, not-for-profit 4-year	
Total	8.2	43.7	48.1
Persistence or departure in 1989–90			
Persisted[3]	6.7	43.4	49.9
Stopout	11.7	50.0	38.3
Stayout	34.0	37.0	29.1
		Public 2-year	
Total	35.6	44.9	19.5
Persistence or departure in 1989–90			
Persisted[3]	26.5	49.6	23.9
Stopout	38.3	48.4	13.4
Stayout	57.9	28.8	13.4

[1]The academic integration index score is based on student responses with respect to how often (never, once, sometimes, often) they reported the following: meeting with faculty outside of class, meeting with an academic advisor, having informal or social contact with faculty, participating in a student study group, using student assistance centers, and attending career-related lectures. The response to each item was coded from 1–4 and the mean was taken. Students' scores were then divided into quartiles representing low, moderate (middle two quartiles), and high scores.

[2]Does not include students in private, for-profit institutions; public less-than-2-year institutions; or private, not-for-profit less-than-4-year institutions (about 14 percent of beginning students).

[3]Includes a small percentage who attained a certificate in 1989–90.

NOTE: Details may not sum to 100 due to rounding.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1989–90 Beginning Postsecondary Students Longitudinal Study, Second Follow-up (BPS:90/94), Data Analysis System.

BEST COPY AVAILABLE

Table 15—Percentage of 1989–90 beginning students according to their use of counseling and job placement services at the first institution, by persistence or departure status in 1989–90 and first institution attended

	Academic counseling	Financial aid counseling	Job counseling	Personal counseling	Job placement
			All beginning students		
Total[1]	71.5	48.7	50.1	39.8	32.1
Persistence or departure in 1989–90					
Persisted[2]	77.7	51.6	54.5	41.0	35.2
Stopout	63.0	41.4	43.0	41.2	25.3
Stayout	42.7	39.8	30.6	30.0	21.0
			All 4-year		
Total	79.8	57.3	54.3	41.7	35.9
Persistence or departure in 1989–90					
Persisted[2]	81.7	56.9	55.0	40.9	36.5
Stopout	70.9	56.4	50.2	44.4	30.9
Stayout	61.6	66.3	49.4	52.1	34.9
			Public 4-year		
Total	79.6	52.5	51.1	38.8	33.5
Persistence or departure in 1989–90					
Persisted[2]	82.2	51.9	51.2	37.4	34.0
Stopout	67.9	51.5	49.4	43.7	28.5
Stayout	61.1	65.1	51.5	51.9	35.0
			Private, not-for-profit 4-year		
Total	80.1	67.2	61.1	47.9	41.1
Persistence or departure in 1989–90					
Persisted[2]	80.8	66.9	62.6	47.8	41.6
Stopout	79.0	70.3	52.4	46.4	37.9
Stayout	63.2	70.2	43.1	52.5	34.3
			Public 2-year		
Total	63.5	40.3	45.9	37.8	28.2
Persistence or departure in 1989–90					
Persisted[2]	72.2	44.4	53.8	41.1	33.3
Stopout	59.8	35.1	40.0	39.8	22.9
Stayout	37.8	32.8	25.4	24.1	17.1

[1]Does not include students in private, for-profit institutions; public less-than-2-year institutions; or private, not-for-profit less-than-4-year institutions (about 14 percent of beginning students).
[2]Includes a small percentage who attained a certificate in 1989–90.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1989–90 Beginning Postsecondary Students Longitudinal Study, Second Follow-up (BPS:90/94), Data Analysis System.

Table 16—Percentage distribution of 1989–90 beginning students according to their overall satisfaction with their first institution, by persistence or departure status in 1989–90 and first institution attended

	Satisfaction with first institution[1]		
	Low	Moderate	High
		All beginning students	
Total[2]	16.9	30.1	53.0
Persistence or departure in 1989–90			
Persisted[3]	17.7	30.9	51.5
Stopout	17.0	31.3	51.8
Stayout	11.7	23.8	64.5
		All 4-year	
Total	20.6	35.8	43.6
Persistence or departure in 1989–90			
Persisted[3]	20.1	36.5	43.3
Stopout	25.3	34.9	39.8
Stayout	19.8	24.7	55.6
		Public 4-year	
Total	18.7	32.1	49.2
Persistence or departure in 1989–90			
Persisted[3]	17.9	32.6	49.5
Stopout	24.9	33.1	42.1
Stayout	19.1	21.1	59.8
		Private, not-for-profit 4-year	
Total	24.6	43.6	31.8
Persistence or departure in 1989–90			
Persisted[3]	24.6	44.2	31.3
Stopout	26.4	39.9	33.7
Stayout	21.8	35.8	42.4
		Public 2-year	
Total	13.3	24.6	62.1
Persistence or departure in 1989–90			
Persisted[3]	14.3	23.1	62.6
Stopout	13.5	29.8	56.8
Stayout	9.7	23.5	66.9

[1]Based on the number of aspects that undergraduates reported being satisfied with related to students' institutions. Items included price of attendance, intellectual growth, prestige of institution, social life, and teaching ability of faculty. A low score corresponded to satisfaction with 1–3 aspects, moderate score with 4 aspects, and a high satisfaction score corresponded with being satisfied with all 5 aspects.

[2]Does not include students in private, for-profit institutions; public less-than-2-year institutions; or private, not-for-profit less-than-4-year institutions (about 14 percent of beginning students).

[3]Includes a small percentage who attained a certificate in 1989–90.

NOTE: Details may not sum to 100 due to rounding.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1989–90 Beginning Postsecondary Students Longitudinal Study, Second Follow-up (BPS:90/94), Data Analysis System.

Table 17—Percentage of 1989–90 beginning students according to financial aid status, by persistence or departure status in 1989–90 and first institution attended

	Received any financial aid	If received aid	
		Grant aid	Loan aid
		All beginning students	
Total[1]	41.7	85.4	37.3
Persistence or departure in 1989–90			
Persisted[2]	46.1	85.7	39.6
Stopout	29.5	83.4	34.3
Stayout	33.4	85.6	23.6
		All 4-year	
Total	56.2	84.2	47.8
Persistence or departure in 1989–90			
Persisted[2]	56.6	84.8	48.0
Stopout	49.8	78.4	52.9
Stayout	62.1	84.3	38.4
		Public 4-year	
Total	48.5	78.8	42.3
Persistence or departure in 1989–90			
Persisted[2]	48.6	79.0	42.3
Stopout	40.5	73.6	49.3
Stayout	60.3	82.5	34.0
		Private, not-for-profit 4-year	
Total	72.3	91.7	55.5
Persistence or departure in 1989–90			
Persisted[2]	72.2	92.5	55.5
Stopout	75.2	85.4	58.3
Stayout	68.1	89.4	51.0
		Public 2-year	
Total	27.8	87.7	16.7
Persistence or departure in 1989–90			
Persisted[2]	31.4	87.8	18.3
Stopout	20.2	89.0	13.5
Stayout	25.7	86.4	14.1

[1]Does not include students in private, for-profit institutions; public less-than-2-year institutions; or private, not-for-profit less-than-4-year institutions (about 14 percent of beginning students).
[2]Includes a small percentage who attained a certificate in 1989–90.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1989–90 Beginning Postsecondary Students Longitudinal Study, Second Follow-up (BPS:90/94), Data Analysis System.

Educational Experiences of Students Who Left the Public 2-Year Sector

Due partly to the large standard errors for public 2-year college stopouts, it was more difficult to distinguish between first-year stopouts and stayouts in this sector. Stopouts were no more likely than stayouts to attend full time (table 12), and while it appears that stayouts may have had somewhat higher GPAs (2.53 versus 2.34), there is not enough statistical evidence to conclude they were different (table 13). Stopouts were more likely than stayouts to "sometimes or often" talk to faculty about academic matters (61 percent versus 36 percent; table 14a); they also tended to use personal and job counseling services more often than stayouts (table 15). However, the two groups did not differ from one another with respect to other academic integration items. Looking at the overall academic integration index score (table 14b), stopouts were less likely than stayouts to have a low score (38 percent versus 58 percent).

While differences between stopouts and stayouts in the public 2-year sector were not as apparent as those found in the 4-year sector, students enrolled in public 2-year colleges may have more varied education goals. Public 2-year colleges serve students whose intentions range from taking a course or two for their own personal development, to taking a series of courses to obtain occupational skills, to earning an associate's degree for the purpose of transferring to a 4-year institution and attaining a bachelor's degree. Thus, not all students at the 2-year level intend to earn a degree, and one might expect students who leave without returning to be more likely than stopouts to have no degree intentions. While stayouts appeared to be more likely than stopouts to report having no degree objective (33 percent versus 21 percent), there was not enough statistical evidence to conclude that the two groups differed in their intentions.[17] Nevertheless, even if there were a measurable difference, two-thirds of students who left the public 2-year sector and did not return within 5 years reported having a certificate or degree goal, indicating a substantial rate of attrition for these students.

[17]BPS:89/94 Data Analysis System.

Summary and Conclusions

Nearly 30 percent of students who first enrolled in college in 1989–90 left before the beginning of their second year. Half or more (depending upon institutional sector) of those who departed reenrolled within 5 years (stopouts). Students who began in the public 2-year sector were much more likely to leave in their first year than those who began in the 4-year sector. Of those who left, students who began in public 2-year institutions were less likely to return than those who began in 4-year institutions.

Stopouts either returned to the same institution (stopout returns) or they transferred elsewhere (stopout transfers). At least half of stopout transfers, whether from the 4-year or public 2-year sector, transferred to the 2-year sector. Among those who transferred from the 4-year sector, about one-quarter earned subbaccalaureate credentials, and 8 percent attained bachelor's degrees. And among stopouts who transferred from the public 2-year sector (with associate's degree intentions),[18] a little under one-half earned vocational certificates, and 8 percent earned associate's degrees.

Among stopouts who began in the 4-year sector, the subsequent persistence of stopout returns was similar to stopout transfers. That is, similar proportions of the two groups attained *some* postsecondary credential within 5 years, and similar proportions subsequently left with no degree. However, stopout transfers tended to earn credentials that take a shorter amount of time to complete—vocational certificates and associate's degrees—while stopout returns were likely to earn bachelor's degrees.

Students who stopped out from private, not-for-profit 4-year institutions and returned to the same institution were much more likely to attain bachelor's degrees within 5 years and were much less likely to have subsequently left with no degree than their counterparts in the public 4-year sector. This result can be interpreted in two ways. Either the private, not-for-profit 4-year sector have more resources to retain stopouts who return, or stopouts who attend private, not-for-profit colleges have stronger degree intentions than their counterparts enrolled in public institutions.

[18] Associate's degree intentions were distinguished because unlike students in the 4-year sector those in the public 2-year sector may have goals other than attaining a degree.

In the 4-year sector, students who *persisted* to their second year were very likely to earn a degree: about 61 percent attained a bachelor's degree by 1994, and an additional 15 percent were still enrolled. First-year persisters from public and private, not-for-profit institutions differed slightly with respect to 5-year persistence: about 19 percent of those who attended public 4-year colleges left with no degree, compared with 14 percent of those from private, not-for-profit institutions. However, first-year persisters from the public 4-year sector were less likely than their counterparts in the private, not-for-profit sector to have attained a bachelor's degree and were more likely to be still enrolled after 5 years.

Unlike the 4-year sector, first-year persisters in the public 2-year sector had similar long-term persistence and attainment rates as stopouts who transferred from the same sector (about half had attained a credential and nearly one in five were still enrolled). However, stopout transfers earned primarily vocational certificates, while persisters earned primarily associate's degrees. Stopouts who returned to the same institution appeared to fare the worst in terms of persistence and attainment—less than one-third attained a credential, and about half left without a degree. It is possible that the outcome differences between stopout transfers and stopout returns in the public 2-year sector signal stronger intentions on behalf of the transfers. That is, students who began with an associate's degree objective but subsequently obtained a vocational certificate may have found a program of study that was more suitable or attainable. Indeed, nearly half of the transfers earned a vocational certificate. In contrast, those who left and returned to the same institution may have faced the same challenges that interfered with their initial enrollment. Consequently, fewer (just over one-quarter) of these students earned a credential than did stopout transfers. Alternatively, students who leave and then return to the same public 2-year sector may be less likely to have explicit degree intentions. Although there was some suggestion of this in the results, the sample was small and the difference was not statistically significant.

While the persistence and attainment rates of students who began in the public 2-year sector were relatively low compared with those in the 4-year sector, it should be noted that at least half of all stopouts who transferred did so to the 2-year sector. This was true whether they transferred from 4-year or public 2-year institutions. Moreover, about half of those who transferred to the 2-year sector earned a subbaccalaureate credential (primarily vocational certificates). Thus, the 2-year sector provided these students with a "second chance" and gave them the opportunity to complete shorter term credentials.

Regardless of where beginning students first enrolled, those who did not return after leaving were more likely to be nontraditional—i.e., older, more often married with children, and more likely to work full time while enrolled—than those who did return. Stayouts were also more likely than stopouts to be in the first generation of their immediate family to attend college.

In the 4-year sector (but not in the public 2-year sector), stayouts were also more likely than stopouts to be in the lowest socioeconomic status quartile. This was found both for 4-year public and private, not-for-profit institutions.

Relative to stayouts, stopouts from the 4-year sector were more academically integrated and were more likely to attend full time, but may have been less satisfied with their institution. Stayouts, on the other hand, appeared to have greater family obligations and other nonschool responsibilities that may have conflicted with their schooling. The differences in educational experiences between stopouts and stayouts from the public 2-year sector were less evident, but like those in the 4-year sector, stayouts were more nontraditional than stopouts and also appeared to be less academically integrated.[19]

Taken together, the results indicate that among students first starting college, those who leave school in the first year and do not return within 5 years (stayouts) have more external obligations such as children and full-time employment than their peers who reenroll (stopouts). These commitments may interfere with a student's ability to integrate fully into an academic program, which in turn is associated with early departure. Stopouts, on the other hand, may have had difficulty adjusting in their first year, but were less encumbered by external commitments. Having fewer external constraints may have allowed them more time to become academically integrated and thus may have contributed to their eventual return. Finally, it should be remembered that the BPS survey extended over a 5-year period. It is possible that students who left in their first year and did not return within the survey time frame may have returned later.

[19]In the near future, it will be possible to explore the intentions of students enrolled in subbaccalaureate institutions in more depth using data from the First Follow-up of a new BPS cohort, made up of students who first began their postsecondary education in the academic year 1995–96. This survey specifically asked students enrolled in 2-year or less-than-2-year institutions the primary reason they were enrolled. Possible responses included job skills (nondegree program); degree or certificate; transfer to a 4-year school; or personal enrichment. This survey will help better distinguish the various reasons students attend subbaccalaureate institutions, which will make it possible to identify more accurately students who are stopouts, dropouts, or those who have fulfilled their educational goals short of earning a credential.

53

Bibliography

Berkner, L., Cuccaro-Alamin, S., and McCormick, A. 1996. *Descriptive Summary of 1989–90 Beginning Postsecondary Students: 5 Years Later* (NCES 96-155). Washington, DC: U.S. Department of Education, National Center for Education Statistics.

Bonham, L.A., and Luckie, J.A. 1993. "Taking a Break in Schooling: Why Community College Students Stop Out." *Community College Journal of Research and Practice* 17 (3): 257.

Bradley, A.P., Jr. et al. 1975. *Attrition at a Nontraditional Institution*. Saratoga Springs, NY: State University of New York, Empire State College (ERIC Document Reproduction Service No. ED112739).

Cohen, A. and Brawer, F. 1989. *The American Community College*, 2nd ed. San Francisco, CA: Jossey-Bass.

Feldman, M.J. 1993. "Factors Associated with One-Year Retention in a Community College." *Research in Higher Education* 34 (4): 503.

Horn, L. 1996. *Nontraditional Undergraduates* (NCES 97-578). Washington, DC: U.S. Department of Education, National Center for Education Statistics.

Horn, L. and Berktold, J. 1998. *A Profile of 1995–96 Undergraduates in U.S. Postsecondary Institutions, with an Essay on Undergraduates Who Work* (NCES 98-084). Washington, DC: U.S. Department of Education, National Center for Education Statistics.

Kent State University, Trumbull Campus. 1993. *Why Students Don't Return: An Investigation of Reasons Why Students Choose Not to Come Back to College. Survey Results, Conclusions, and Implications*. Kent, OH: Kent State University (ERIC Document Reproduction Service No. ED388324).

Kojaku, L. and Nuñez, A.M. Forthcoming. *Profile of 1995–96 Beginning Postsecondary Students*. Washington, DC: U.S. Department of Education, National Center for Education Statistics.

Lee, M.M. 1996. *Student Retention Survey: Why Students Did Not Return, Spring Semester 1994*. Valhalla, NY: Westchester Community College, Office of Institutional Research (ERIC Document Reproduction Service No. ED391565).

Mohammadi, J. 1994. *Exploring Retention and Attrition in a Two-Year Public Community College*. Martinsville, VA: Patrick Henry Community College (ERIC Document Reproduction Service No. ED382257).

Moore, N. 1995. *Persistence and Attrition at San Juan College*. Farmington, NM: San Juan College, Office of Institutional Research, Grant Development, and Planning (ERIC Document Reproduction Service No. ED380159).

Nuñez, A.M. and Cuccaro-Alamin, S. 1998. *First-Generation Students: Undergraduates Whose Parents Never Enrolled in Postsecondary Education* (NCES 98-082). Washington, DC: U.S. Department of Education, National Center for Education Statistics.

Ogletree, E. 1992. *Analysis of the Non-Retention of CUU First-Year Students*. Chicago, IL: Chicago Urban University (ERIC Document Reproduction Service No. ED352866).

Sydow, D.L. et al. 1996. *Making Student Retention an Institutional Priority*. Big Stone Gap, VA: Mountain Empire Community College (ERIC Document Reproduction Service No. ED402961).

Tinto, V. 1993. *Leaving College*, 2nd ed. Chicago, IL: University of Chicago Press.

University of Maryland, College Park. 1987. *Students Who Become Nonpersisters: Who, When, Why, and To Do What? The Astin Index: One Approach to Predicting Persistence at UMCP Four Years after Initial Enrollment. Maryland Longitudinal Study Research Highlights. Research Reports 5 and 9*. College Park, MD: University of Maryland, Maryland Longitudinal Study Steering Committee (ERIC Document Reproduction Service No. ED301103).

White, J.H. 1971. *Individual and Environmental Factors Associated with Freshman Attrition at a Multi-Campus Community College*. Ann Arbor, MI: George Washington University (ERIC Document Reproduction Service No. ED063919).

Appendix A—Glossary

This glossary describes the variables used in this report. The items were taken directly from the NCES BPS:90/94 Data Analysis System (DAS), an NCES software application that generates tables from the BPS:90/94 data (see appendix B for a description of the DAS). The variables listed in the index below are organized by sections in the order they appear in the report; the glossary is in alphabetical order by variable name (displayed along the right-hand column). Some items were reported by the student only during the Computer-Assisted Telephone Interview (CATI). Variables based only on CATI respondents are identified.

Glossary Index

OVERVIEW
Persistence in 1989–90 ..... STOP8990
Institution in 1989–90 ..... OFCO8990

STOPOUTS
Grade point average ..... GPA
Number of degrees attempted ..... NUMDEG
Academic year stopouts returned ..... STOPBACK
First transfer institution ..... TRANSLVL
Attainment and enrollment status as of 1994 ..... ATTENRST
Associate's degree objective GOAL8990

STOPOUTS VERSUS STAYOUTS
Nontraditional status ATRS8990
First-generation college student (parents' highest education) ..... RPARED
Gender ..... H_GENDR
Age ..... AGE
Marital status MAR8990
Number of children KIDS8990
Worked while enrolled HRS8990
Socioeconomic status ..... SESPERC
Race–ethnicity ..... BPSRACE
Attendance intensity ..... ATTEND
Timing of enrollment ..... DELAYENR

INTEGRATION VARIABLES
Attended career-related lectures ..... ATLECTUR
Had contact with faculty outside of class ..... CONTACT
Used student assistance centers ..... CENTERS
In study groups with other students ..... STUDYGRP
Met advisor concerning academic plans ..... TALKADVI
Talked about academic matters with faculty ..... TALKFAC
Academic integration index ACAD8990

USE OF COUNSELING SERVICES VARIABLES
Academic counseling ..... SATNACNS
Financial aid counseling ..... SATNFCNS
Job counseling ..... SATNJCNS
Personal counseling ..... SATNPCNS
Job placement ..... SATJOBP
Satisfaction with first institution ..... SATISFYN

FINANCIAL AID VARIABLES
Received financial aid AID8990
Received grant aid ..... TOTGRT
Received loan aid ..... TOTLOAN
Financial aid combination AIDP8990

BEST COPY AVAILABLE

Age **AGE**

Indicates student's age as of 12/31/89.

18 or younger
19–23
24–29
30 or older

Academic integration index **ACAD8990**

Average academic integration score at the 1989–90 postsecondary institution. Students were asked in student CATI to report how often they did each of the following during the 1989–90 term: attend career-related lectures (ATLECTUR), participate in study groups with other students (STUDYGRP), talk over academic matters with faculty (TALKFAC), and meet with advisor concerning academic plans (TALKADVI). Scores include never (1), once (2), sometimes (3), and often (4). A mean of the score of the four variables was calculated to compose the academic integration score. Then the scores were classified into low, moderate, and high as described below:

Low	Student had a mean score of 2 or less.
Moderate	Student had a mean score of 2.1 to 2.9.
High	Student had a mean score of 3.0 to 4.

Received financial aid **AID8990**

Indicates whether student received any financial aid in 1989–90. It was aggregated to the following categories:

No aid
Received aid

Financial aid combination **AIDP8990**

Indicates the combinations of grants, loans and other aid received at the 1989–90 postsecondary institution.

Grants, no loans
Loans
No aid

Attended career-related lectures **ATLECTUR**

First-time freshmen's response to the following question: "How often did you do each of the following during the [sample term]?" Possible responses were never, once, sometimes, and often. Asked on student CATI.

a. Talked with faculty about academic matters outside of class time? [TALKFAC]
b. Met with your advisor concerning your academic plans? [TALKADVI]
c. Had informal or social contacts with your advisor or other faculty members outside of classrooms/offices? [CONTACT]
d. Participated in study groups with other students outside of the classroom? [STUDYGRP]
f. Participated in one or more student assistance centers or programs (e.g., counseling programs, learning skills center, minority student services, health services)? [CENTERS]
h. Attended career-related lectures, conventions, or field trips with friends? [ATLECTUR]

Nontraditional status **ATRS8990**

Based on an index of nontraditional characteristics from 0–7 composed of 7 characteristics known to be adversely related to persistence and attainment. Characteristics include delayed enrollment, no high school diploma (including GED recipients), part-time enrollment, financial independence, having dependents other than spouse, single parent status, and working full time while enrolled.

Traditional or minimally nontraditional	Student had 1 risk factor or none.
Moderately nontraditional	Student had 2 or 3 risk factors.
Highly nontraditional	Student had 4 or more risk factors.

Attendance intensity **ATTEND**

Indicates the full-time/part-time attendance status for beginning term only. In most cases, it was the fall 1989. Other possible terms were determined in the months of August 1989, February 1990, and June 1990.

Attainment and enrollment status as of 1994 **ATTENRST**

Degree attainment and enrollment status as of the 1994 follow-up interview. Combines highest degree, enrollment status at follow-up, and for enrolled students, level of the institution where enrolled. The variable was aggregated as follows:

Certificate
Associate's degree
Bachelor's degree
No degree, enrolled in 1994
No degree, not enrolled in 1994

Race–ethnicity **BPSRACE**

White, non-Hispanic	A person having origins in any of the original peoples of Europe, North Africa, or the Middle East (except those of Hispanic origin).
Black, non-Hispanic	A person having origins in any of the black racial groups of Africa, who is not of Hispanic origin.

Hispanic	A person of Mexican, Puerto Rican, Cuban, Central or South American, or other Spanish culture or origin, regardless of race.
Asian/Pacific Islander	A person having origins in any of the peoples of the Far East, Southeast Asia, the Indian subcontinent, or Pacific Islands. This includes people from China, Japan, Korea, the Philippine Islands, Samoa, India, and Vietnam.
American Indian/Alaskan Native	A person having origins in any of the original peoples of North America and who maintains cultural identification through tribal affiliation or community recognition.

Used student assistance centers **CENTERS**

Indicates if student participated in one or more student assistance centers or programs (e.g., counseling programs). For a complete description, see ATLECTUR. Asked on student CATI.

Had contact with faculty outside of class **CONTACT**

Indicates if student had informal or social contacts with advisor or other faculty members outside of classrooms/offices. For a complete description, see ATLECTUR. Asked on student CATI.

Timing of enrollment **DELAYENR**

Indicates whether student delayed entry into postsecondary education after high school.

Delayed
No delay

Gender **H_GENDR**

Student response to the question "Are you male or female?"

Male
Female

Grade point average **GPA**

Cumulative grade point average for 1989–90. Most recent GPA was used if the cumulative GPA was not available. GPAs were converted to a 4.0 scale. Approximately 25 percent of students did not have a reported GPA. In many cases, it meant that the student did not complete any courses.

Associate's degree objective **GOAL8990**

Type of degree student reported working toward at 1989–90 postsecondary institution. The categories include the following:

No degree	Student did not report working toward any formal degree.
Vocational certificate	Student reported working toward a certificate or formal award other than an associate's or bachelor's degree.
Associate's degree	Student reported working toward an associate's degree.
Bachelor's degree	Student reported working toward a bachelor's degree.

Worked while enrolled **HRS8990**

Average hours worked per week during those months when enrolled for at least part of the month. If the student was employed (including college work-study and any assistantships) during a given month, the average number of hours worked per week across all jobs held during the month was derived based on the starting and ending dates and the average hours worked per week of each job as reported during the interview. In calculating this average, the denominator was increased by 1 if the student was employed and enrolled at any time during the month.

NOTE: For this variable, employment was only considered if the student was enrolled during part of the month. For example, if students worked 20 hours per week for 3 months during the year they were enrolled, but worked 40 hours per week at other times, their value for this variable would be 20 (i.e., in deriving this variable, the hours employed while not enrolled were ignored). Asked on student CATI. The variable was aggregated as follows:

Did not work
1–15 hours per week
16–34 hours per week
35 or more per week

Number of children **KIDS8990**

Number of children living with the student during the month the student began at 1989–90 postsecondary institution.

No children
One or more children

Marital status **MAR8990**

Marital status during month when first enrolled at 1989–90 postsecondary institution.

Never married	Student was never married.
Married	Student was married.
Divorced/separated/widowed	Student was either married, but separated from his or her spouse, widowed, or divorced.

Number of degrees attempted **NUMDEG**

Total number of all types of degrees (associate's, bachelor's, and certificate) the student attempted during postsecondary education through 1994.

BEST COPY AVAILABLE

Institution in 1989–90 **OFCO8990**

Level and control of 1989–90 postsecondary institution. For this analysis, only public 2-year; public 4-year; and private, not-for-profit 4-year institutions were considered.

Public 2-year	A postsecondary institution that is supported primarily by public funds and operated by publicly elected or appointed officials who control the programs and activities. Institution that does not confer bachelor's degrees, but does provide 2-year programs that result in a certificate or an associate's degree, or 2-year programs that fulfill part of the requirements for a bachelor's degree or higher at a 4-year institution.
Public 4-year	A postsecondary education institution that is supported primarily by public funds and operated by publicly elected or appointed officials who control the programs and activities. Institutions award bachelor's degrees and can award doctorate degrees and first-professional degrees. These degrees include chiropractic, pharmacy, dentistry, podiatry, medicine, veterinary medicine, optometry, law, osteopathic medicine, and theology.
Private, not-for-profit 4-year	A postsecondary institution that is controlled by an independent governing board and incorporated under Section 501(c)(3) of the Internal Revenue Code and can award bachelor's degrees or higher, including institutions that award doctorate degrees and first-professional degrees. These degrees include chiropractic, pharmacy, dentistry, podiatry, medicine, veterinary medicine, optometry, law, osteopathic medicine, and theology.

First-generation college student (parents' highest education) **RPARED**

Maximum of father's or mother's education. For this analysis, this variable was used to indicate first-generation college student status.

First-generation students included those whose parents had:
- High school or less

Non-first-generation students included those whose parents had:
- Some postsecondary education
- Bachelor's degree or higher

Satisfaction with first institution **SATISFYN**

The number of aspects of the 1989–90 postsecondary institution the student reported being satisfied with. The aspects are price of attendance, intellectual growth, prestige of institution, social life, and teaching ability of faculty. For this analysis, the numbers of aspects were categorized as follows:

Low	Student was satisfied with 1–3 aspects.
Moderate	Student was satisfied with 4 aspects.
High	Student was satisfied with 5 aspects.

Academic counseling **SATNACNS**

Indicates whether student used and was satisfied or not with academic counseling at the 1989–90 postsecondary institution. For this analysis, the variable was aggregated as follows:

Did not use
Used

Financial aid counseling **SATNFCNS**

Indicates whether student used and was satisfied or not with financial aid counseling at 1989–90 postsecondary institution. For this analysis, the variable was aggregated as follows:

Did not use
Used

Job counseling **SATNJCNS**

Indicates whether student used and was satisfied or not with job counseling services at 1989–90 postsecondary institution. For this analysis, the variable was aggregated as follows:

Did not use
Used

Job placement **SATNJOBP**

Indicates whether student used and was satisfied or not with job placement services at the first institution. For this analysis, the variable was aggregated as follows:

Did not use
Used

Personal counseling **SATNPCNS**

Indicates whether student used and was satisfied or not with personal counseling services at 1989–90 postsecondary institution. For this analysis, the variable was aggregated as follows:

Did not use
Used

Socioeconomic status **SESPERC**

Composite variable combining parents' education and occupation, dependent student's family income, and the existence of material possessions in respondent's home. Applies to first-year students whether or not they are beginning students.

Low quartile	Socioeconomic status fell at or below the lowest 25th percentile.

Middle quartiles	Socioeconomic status fell between the 25th and the 75th percentiles.
High quartile	Socioeconomic status fell at or above the 75th percentile.

Persistence in 1989–90 **STOP8990**

Indicates student's persistence status at the beginning of the second year and also indicates whether a student subsequently returned (stopout) as of 1994. This variable recodes the original persistence variable (PER8990R)[20] to disaggregate students coded as stopout transfers or downward transfers, who may or may not have stopped out. This variable differs from PER8990R in several ways:

1. It disaggregates transfer stopouts from downward transfers who did not stop out, and calls the latter persisters.
2. If a student transferred and earned a certificate in 1989–90, they are coded as attained certificate.
3. If a student transferred and then left for good in 1989–90, they are coded as leaving without return.

Attained certificate	Student attained certificate in 1989–90.
Persisted to 1990–91	Student had no more than a 4-month break in 1989–90 enrollment and reenrolled the following year (1990–91). They may or may not have subsequently interrupted their enrollment.
Stopout return	Student interrupted enrollment in the first year or did not reenroll in 1990–91 and later reenrolled in the institution of origin.
Stopout transfer	Student interrupted enrollment in the first year or did not reenroll in 1990–91 and later reenrolled at a different institution.
Stayed out though 1994	Student left in first year and did not reenroll before the end of the 1994 follow-up.

Academic year stopouts returned **STOPBACK**

Based on students identified as stopouts according to STOP8990 and the year-to-year persistence and attainment variable. The first instance where a student is shown to be enrolled is coded as the year of return.

1990–91
1991–92
1992–93
1993–94

In study groups with other students **STUDYGRP**

Indicates if student participated in study groups with other students outside of the classroom. For a complete description, see ATLECTUR. Asked on student CATI.

[20]See Berkner et al. (1996) for a detailed description of the variable PER8990.

Met advisor concerning academic plans **TALKADVI**

Indicates if student met with advisor concerning academic plans. For a complete description, see ATLECTUR. Asked on student CATI.

Talked about academic matters with faculty **TALKFAC**

Indicates if student talked with faculty about academic matters outside of class time. For a complete description, see ATLECTUR. Asked on student CATI.

Received grant aid **TOTGRT**

Indicates whether student received any grants from July 1989 to June 1990. Grants are a type of student financial aid that do not require repayment or employment. At the undergraduate level, a grant is usually (but not always) awarded on the basis of need, possibly combined with some skills or characteristics that a student possesses. Grants include scholarships and fellowships. The percentage of students with grants is the percentage with positive amounts recorded for this variable.

Received loan aid **TOTLOAN**

Indicates whether student received any loans from July 1989 to June 1990. This includes all loans through federal, state, or institutional programs except PLUS loans (which are made to parents). Loans are a type of student financial aid that advances funds and that are evidenced by a promissory note requiring the recipient to repay the specified amounts under prescribed conditions. The percentage of students with loans is the percentage with positive amounts recorded for this variable.

First transfer institution **TRANSLVL**

Indicates the level of institution for student's first transfer. Students were coded 0 if they did not transfer.

4-year
2-year
Less-than-2-year

Appendix B—Technical Notes and Methodology

Beginning Postsecondary Students Longitudinal Study

The Beginning Postsecondary Students Longitudinal Study (BPS:90/94) followed students from the 1989–90 National Postsecondary Student Aid Study (NPSAS:90) sample who were identified as first-time beginning (FTB) students in academic year 1989–90. A computer-assisted telephone interview (CATI) was conducted with these students 2 and 4 years after the Base Year survey. The CATI system provides interviewers with screens of questions and guides the interviewer and respondent through the interview. The CATI software automatically skips inapplicable questions based on prior response patterns or suggests appropriate wording for probes should a respondent pause or seem uncertain in answering a question. This particular CATI collected information concerning enrollment, program completion, education financing, employment, and family formation; graduate school access and enrollment; and civic participation. The data derived from this survey permit a variety of analyses concerning postsecondary persistence and completion, entry into the work force, and civic participation.

Response Rates

Unlike other NCES longitudinal surveys based on grade-specific cohorts (such as High School and Beyond), the BPS design allows for the increasing numbers of "nontraditional" postsecondary students, such as those who have delayed their education due to financial needs or family responsibilities. Students who began their postsecondary studies before 1989–90, stopped out, and then returned to their studies in 1989–90 were not included, nor were students who were still enrolled in high school.

The BPS survey sample, while representative and statistically accurate, is not a simple random sample. Instead, the samples are selected using a more complex three-step procedure with stratified samples and differential probabilities of selection at each level. First, postsecondary institutions were selected within geographic strata. Once institutions were organized by zip code and state, they were further stratified by control (i.e., public; private, not-for-profit; or private, for-profit) and degree offering (less-than-2-year; 2-year to 3-year; 4-year nondoctorate-granting; and 4-year doctorate-granting).

A student was defined to be a respondent for BPS:90/94 if the student either confirmed the schools attended (including identification of any additional schools not previously reported) or provided status as of February 1994 for enrollment, employment, and postsecondary degree attainment. Among the known eligible sample students,[21] the unweighted BPS:90/94 response rate is 91.4 percent. The weighted response rate, using the NPSAS:90 analysis weights, is 91.0 percent. Among respondents, about 10 percent of sample members did not have sufficiently detailed enrollment histories to allow for classification in the persistence variables used in this report.

For more information on BPS:90/94, consult *Beginning Postsecondary Students Longitudinal Study Second Follow-up (BPS:90/94) Final Technical Report* (NCES 96-153) (Washington, DC: U.S. Department of Education, National Center for Education Statistics, 1996).

Accuracy of Estimates

The statistics in this report are estimates derived from a sample. Two broad categories of error occur in such estimates: sampling and nonsampling errors. Sampling errors occur because observations are made only on samples of students, not on entire populations. Nonsampling errors occur not only in sample surveys but also in complete censuses of entire populations. Nonsampling errors can be attributed to a number of sources: inability to obtain complete information about all students in all institutions in the sample (some students or institutions refused to participate, or students participated but answered only certain items); ambiguous definitions; differences in interpreting questions; inability or unwillingness to give correct information; mistakes in recording or coding data; and other errors of collecting, processing, sampling, and imputing missing data.

Data Analysis System

The estimates presented in this report were produced using the BPS:90/94 Data Analysis System (DAS). The DAS software makes it possible for users to specify and generate their own tables from BPS:90/94 data. With the DAS, users can replicate or expand upon the tables presented in this report. In addition to the table estimates, the DAS calculates proper standard errors[22] and weighted sample sizes for these estimates. For example, table B1 contains standard

[21] Eligibility status could not be determined for about 6 percent of the BPS:90/94 sample.

[22] Since the BPS sample is not a simple random sample, simple random sample techniques for estimating sampling errors cannot be applied to these data. The DAS takes into account the complexity of the sampling procedures and calculates standard errors appropriate for such samples. The method for computing sampling errors used by the DAS involves approximating the estimator by the linear terms of a Taylor series expansion. The procedure is typically referred to as the Taylor series method.

Table B1—Standard errors for text table 6: Percentage distribution of 1989–90 beginning students according to their highest degree attained or enrollment status in 1994, by persistence or departure status in 1989–90 and first institution attended

	Attained				No degree, enrolled in 1994	No degree, not enrolled in 1994
	Total	Certificate	Associate's degree	Bachelor's degree		
				All beginning students		
Total[1]	1.09	0.83	0.81	1.04	0.74	1.08
Persistence or departure in 1989–90						
Persisted[2]	1.22	1.05	1.05	1.32	0.88	1.06
Stopout return	4.20	3.23	3.04	1.30	3.47	4.68
Stopout transfer	3.91	3.76	1.98	0.77	3.13	3.54
				All 4-year		
Total	1.26	0.38	0.39	1.35	0.77	1.04
Persistence or departure in 1989–90						
Persisted[2]	1.22	0.34	0.44	1.31	0.88	0.86
Stopout return	4.38	0.72	1.31	4.22	4.44	4.71
Stopout transfer	4.04	3.16	2.92	2.01	3.29	4.28
				Public 4-year		
Total	1.59	0.52	0.54	1.64	1.00	1.39
Persistence or departure in 1989–90						
Persisted[2]	1.60	0.47	0.62	1.67	1.18	1.17
Stopout return	4.90	0.00	1.80	4.65	5.84	6.01
Stopout transfer	5.15	4.14	3.68	2.43	4.15	5.46
				Private, not-for-profit 4-year		
Total	1.64	0.40	0.43	1.91	0.79	1.36
Persistence or departure in 1989–90						
Persisted[2]	1.42	0.42	0.44	1.70	0.80	1.11
Stopout return	7.34	2.49	0.83	7.66	4.57	6.07
Stopout transfer	5.08	2.46	3.97	3.33	4.53	5.32
				Public 2-year		
Total	1.98	1.44	1.63	1.01	1.49	2.01
Persistence or departure in 1989–90						
Persisted[2]	2.55	2.06	2.39	1.69	2.04	2.52
Stopout return	5.75	3.55	4.68	1.25	4.31	5.71
Stopout transfer	6.29	6.26	2.84	0.00	5.52	5.59

[1]Does not include students in private, for-profit institutions; public less-than-2-year institutions; or private, not-for-profit less-than-4-year institutions (about 14 percent of beginning students).

[2]Includes a small percentage who attained a certificate in 1989–90.

NOTE: The zero standard errors round to less than 0.001 percent.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1989–90 Beginning Postsecondary Students Longitudinal Study, Second Follow-up (BPS:90/94), Data Analysis System.

errors that correspond to table 6 in the text, and was generated by the BPS:90/94 DAS. If the number of valid cases is too small to produce a reliable estimate (fewer than 30 cases), the DAS prints the message "low-N" instead of the estimate.

In addition to tables, the DAS will also produce a correlation matrix of selected variables to be used for linear regression models. Included in the output with the correlation matrix are the design effects (DEFTs) for each variable in the matrix. Since statistical procedures generally compute regression coefficients based on simple random sample assumptions, the standard errors must be adjusted with the design effects to take into account the BPS:90/94 stratified sampling method. (See discussion under "Statistical Procedures" below for the adjustment procedure.)

The DAS can be obtained electronically from the NCES website (NCES.ed.gov) or from the west coast "mirror site" (PEDAR-DAS.org). For more information about the BPS:90/94 Data Analysis System, contact:

Aurora D'Amico
NCES Postsecondary and Educational Outcomes Longitudinal Studies
555 New Jersey Avenue, NW
Washington, DC 20208-5652
(202) 219-1365
Internet address: Adamico@inet.ed.gov

Statistical Procedures

Two types of statistical procedures were used in this report: testing differences between means, and adjustment of means after controlling for covariation among a group of variables. Each procedure is described below.

Differences Between Means

The descriptive comparisons were tested in this report using the Student's *t* statistic. Differences between estimates are tested against the probability of a Type I error, or significance level. The significance levels were determined by calculating the Student's *t* values for the differences between each pair of means or proportions and comparing these with published tables of significance levels for two-tailed hypothesis testing.

Student's *t* values may be computed to test the difference between estimates with the following formula:

$$t = \frac{E_1 - E_2}{\sqrt{se_1^2 + se_2^2}} \qquad (1)$$

where E_1 and E_2 are the estimates to be compared and se_1 and se_2 are their corresponding standard errors. This formula is valid only for independent estimates. When estimates are not independent, a covariance term must be added to the formula. If the comparison is between the mean of a subgroup and the mean of the total group, the following formula is used:

$$\frac{E_{sub} - E_{tot}}{\sqrt{se_{sub}^2 + se_{tot}^2 - 2p\ se_{sub}^2}} \tag{2}$$

where E_{sub} is the proportion among the subgroup and E_{tot} is the proportion among all cases; and where p is the proportion of the total group contained in the subgroup.[23]

When comparing two percentages from a distribution that adds to 100 percent, the following formula is used:

$$\frac{E_1 - E_2}{\sqrt{se_1^2 + se_2^2 - 2(r)se_1\ se_2}} \tag{3}$$

where r is the correlation between the two estimates.[24] The estimates, standard errors, and correlations can all be obtained from the DAS.

There are hazards in reporting statistical tests for each comparison. First, comparisons based on large t statistics may appear to merit special attention. This can be misleading, since the magnitude of the t statistic is related not only to the observed differences in means or percentages but also to the number of students in the specific categories used for comparison. Hence, a small difference compared across a large number of students would produce a large t statistic.

A second hazard in reporting statistical tests for each comparison occurs when making multiple comparisons among categories of an independent variable. For example, when making paired comparisons among different levels of income, the probability of a Type I error for these comparisons taken as a group is larger than the probability for a single comparison. When more than one difference between groups of related characteristics, or "families," are tested for statistical significance, one must apply a standard that assures a level of significance for all of those comparisons taken together.

Comparisons were made in this report only when $p \leq .05/k$ for a particular pairwise comparison, where that comparison was one of k tests within a family. This guarantees both that the

[23]U.S. Department of Education, National Center for Education Statistics, *A Note from the Chief Statistician*, No. 2, 1993.
[24]Ibid.

individual comparison would have $p \leq .05$ and that for k comparisons within a family of possible comparisons, the significance level for all the comparisons will sum to $p \leq .05$.[25]

For example, in a comparison of the percentages of males and females who enrolled in postsecondary education, only one comparison is possible (males versus females). In this family, k=1, and the comparison can be evaluated without adjusting the significance level. When students are divided into five racial–ethnic groups and all possible comparisons are made, then k=10 and the significance level of each test must be $p \leq .05/10$, or $p \leq .005$. The formula for calculating family size (k) is as follows:

$$k = \frac{j(j-1)}{2} \tag{4}$$

where j is the number of categories for the variable being tested. In the case of race–ethnicity, there are five racial–ethnic groups (American Indian/Alaskan Native, Asian/Pacific Islander, black non-Hispanic, Hispanic, and white non-Hispanic), so substituting 5 for j in equation 2,

$$k = \frac{5(5-1)}{2} = 10$$

Adjustment of Means to Control for Background Variation

Tabular results are limited by sample size when attempting to control for additional factors that may account for the variation observed between two variables. For example, when examining the percentages of those who completed a degree or were still enrolled in postsecondary education 5 years after their initial enrollment, it is impossible to know to what extent the observed variation is due to socioeconomic status (SES) differences and to what extent it is due to differences in other factors related to SES, such as type of institution attended, intensity of enrollment, and so on. However, if a nested table were produced showing SES within type of institution attended within enrollment intensity, the cell sizes would be too small to identify the patterns. When the sample size becomes too small to support controls for another level of variation, one must use other methods to take such variation into account.

[25]The standard that $p \leq .05/k$ for each comparison is more stringent than the criterion that the significance level of the comparisons should sum to $p \leq .05$. For tables showing the t statistic required to ensure that $p \leq .05/k$ for a particular family size and degrees of freedom, see Olive Jean Dunn, "Multiple Comparisons Among Means," *Journal of the American Statistical Association* 56 (1961): 52–64.

To overcome this difficulty, multiple linear regression was used to obtain means or percentages that were adjusted for covariation among a list of control variables.[26] Adjusted means for subgroups were obtained by regressing the dependent variable on a set of descriptive variables such as student demographic characteristics and institution characteristics. Substituting ones or zeros for the subgroup characteristic(s) of interest and the mean proportions for the other variables results in an estimate of the adjusted proportion for the specified subgroup, holding all other variables constant. For example, consider a hypothetical case in which two variables, age and gender, are used to describe an outcome, *Y* (such as attaining a degree). The variables age and gender are recoded into a dummy variable representing age, *A*, and a dummy variable representing gender, *G*:

Age	*A*
24 years or older	1
Under 24 years old	0
Gender	*G*
Female	1
Male	0

The following regression equation is then estimated from the correlation matrix output from the DAS:

$$\hat{Y} = a + b_1 A + b_2 G \qquad (5)$$

Where *Y* is the adjusted mean (or percentage), *a* is the intercept from the regression model; b_1 is the regression coefficient of the dummy variable representing age; and b_2 is the regression coefficient representing gender. To estimate the adjusted mean for any subgroup evaluated at the mean of all other variables, one substitutes the appropriate values for that subgroup's dummy variables (1 or 0) and the mean for the dummy variable(s) representing all other subgroups. For example, suppose *Y* represents degree attainment and is being described by age (*A*) and gender (*G*), with means as follows:

VARIABLE	MEAN
A	0.355
G	0.521

Next, suppose the regression equation results in:

[26]For more information about weighted least squares regression, see Michael S. Lewis-Beck, *Applied Regression: An Introduction*, Vol. 22 (Beverly Hills, CA: Sage Publications, Inc., 1980); William D. Berry and Stanley Feldman, *Multiple Regression in Practice*, Vol. 50 (Beverly Hills, CA: Sage Publications, Inc., 1987).

$$\hat{Y} = 0.15 + 0.17A + 0.01G \quad (6)$$

To estimate the adjusted value for older students, one substitutes the appropriate parameter estimates and variable values into equation 6.

Variable	Parameter	Value
a	0.15	—
A	0.17	1.000
G	0.01	0.521

This results in:

$$\hat{Y} = 0.15 + (0.17)(1) + (0.01)(0.521) = 0.325$$

In this case, the adjusted mean for older students is 0.325, and it represents the expected chance of degree attainment for older students who look like the average student across the other variables (in this example, gender). In other words, the adjusted percentage of students 24 or older who attained a degree after controlling for gender is 32.5 percent (0.325 x 100 for conversion to a percentage).

One can produce a multivariate model using the DAS, since one of the DAS output options is a correlation matrix, computed using pair-wise missing values.[27] This matrix can be used by most statistical software packages as the input data for least-squares regression. That is the approach used for this report, with an additional adjustment to incorporate the complex sample design into the statistical significance tests of the parameter estimates (described below). For tabular presentation, parameter estimates and standard errors were multiplied by 100 to match the scale used for reporting unadjusted and adjusted percentages.

Most statistical software packages assume simple random sampling when computing standard errors of parameter estimates. Because of the complex sampling design used for the BPS survey, this assumption is incorrect. A better approximation of their standard errors is to multiply each standard error by the design effect associated with the dependent variable (DEFT),[28] where the DEFT is the ratio of the true standard error to the standard error computed under the assumption of simple random sampling. The DEFT is calculated by the DAS and is part of the correlation matrix output file.

---

[27]Although the DAS simplifies the process of making regression models, it also limits the range of models. Analysts who wish to use other than pairwise treatment of missing values or to estimate probit/logit models (which are the most appropriate for models with categorical dependent variables) can apply for a restricted data license from NCES. For a discussion of such models, see John H. Aldrich and Forrest D. Nelson, *Linear Probability, Logit and Probit Models* (Quantitative Applications in Social Sciences, Vol. 45) (Beverly Hills, CA: Sage, 1984).

[28]The adjustment procedure and its limitations are described in C.J. Skinner, D. Holt, and T.M.F. Smith, eds., *Analysis of Complex Surveys* (New York: John Wiley & Sons, 1989).

United States
Department of Education
Washington, DC 20208–5652

Official Business
Penalty for Private Use, $300

Postage and Fees Paid
U.S. Department of Education
Permit No. G–17

Standard Mail (A)